



BrewTimes™



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Introducing BrewTimes :

We M/s Balaji Enzyme & Chemical Pvt Ltd, are pleased to bring to you our September 2022 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.

We are extremely proud of announcing our association with IIT Bombay Research Park. We have begun a journey together to work on sustainable, reliable and innovative solutions for the Food and Beverage Industry.

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.





Hop Report

August 2022

- Drought and heat wave takes toll on European hop crop
- German crop estimated to be down by 20% vs. 2021
- Average crop expected in the US

I. GROWING CONDITIONS GERMANY

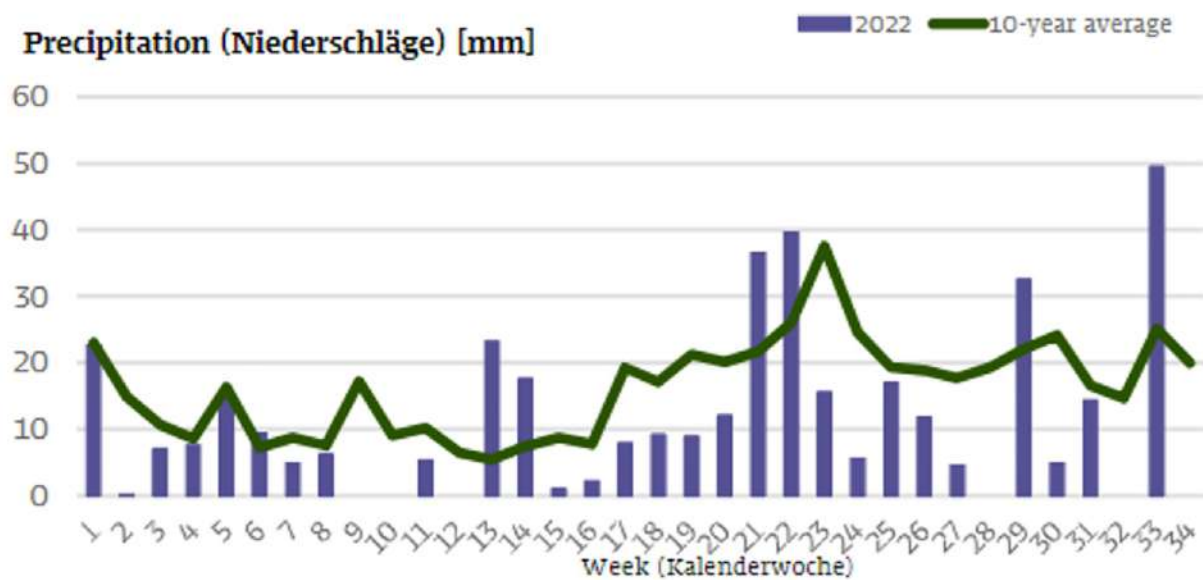
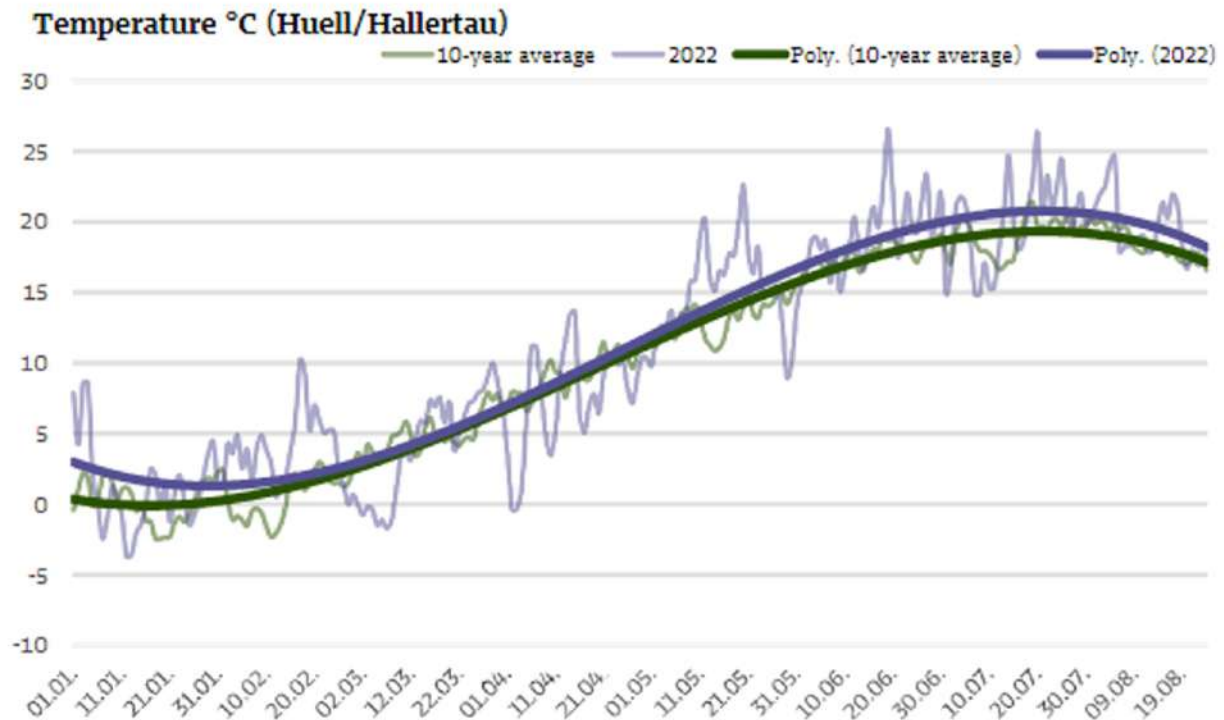
Growing conditions in Europe have been characterized by above average temperatures through most of the growing season and below average precipitation. The official crop estimate for Germany is showing a yield that is 18% below what one would expect from a normal crop.

GROWING AREA	CROP ESTIMATE (TO)	DEVIATION FROM EXPECTED AVERAGE
Hallertau	32.500	-18.5%
Elbe-Saale	2.691	-13.3%
Tettnang	2.421	-11.5%
Spalt	491	-32.6%
Total	38.103	-18.1%

While the German crop is estimated to be short by 18% vs. a normal crop, it is down by 20.4% compared to crop 2021, which yielded 47.862 tonnes.

Particularly the early maturing varieties (Hallertau Mittelfrüh, Northern Brewer, Hall. Tradition, Perle) are affected and will yield poorly. Rainfalls towards the end of August are giving hope for the later maturing varieties that still have time to recover.

Early alpha acid screening indicates, as can be expected, that alpha acid levels will also be below their respective long-term average.



For a more detailed report on the growing conditions as well as a deeper look into the challenges of organic hop growing, please check out our **August HopUpdate**:

[BarthHaas/Blog](#)



II. EUROPE

Europe:

The other European growing areas have seen similar conditions and crop expectations are a mixed bag compared to 2021. After a record crop in 2021 the Czech Republic is in store for a very poor crop this year.

GROWING AREA	CROP 2022 ESTIMATE (TO)	CROP 2021
Czech Republic	4.700	8.306
Slovenia	2.500	2.186
Poland	3.250	3.108

III. MARKETS

What all of this means for the markets is very hard to gauge. There is certainly supply from previous crops that will help to mitigate the shortfall, but these inventories are not necessarily of the varieties that are most needed.

Many brewers are reporting very good beer production volumes for the first half of 2022 as the on-premise business is back in full swing. Some have even exceeded their output levels of the first six months of 2019. Therefore, demand is mostly strong across the globe.

Overall, we believe there is enough supply available to satisfy demand, but it will require the cooperation and flexibility from brewers with regards to crop year and varieties. The 2022 crop will also present an opportunity to make corrections to over-contracted forward positions. Finding the right price point for every variety in the spot market will prove tricky in view of a short crop 2022 in combination with inventories from previous crops at very variable levels.

What is certain is that forward prices will be higher than in the past. Growers are facing significant cost increases, much higher than general inflation, and will not be able to operate at historic price levels. We also encourage brewers to embrace modern varieties that are better suited to the changing climate and provide more stable yields than the well-known workhorses of the past.

We hope to see you at our booth at Drinktec (Sept. 12 - 16, Hall A5). Until then,



BarthHaas®



BIJAY BAHADUR

**B.Sc. (Hons.); B.Tech. (Gold Medallist); PGDEE; FIE;
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Introduction

Medieval ale (unhopped beer) rapidly went sour and turned into malt vinegar. Many herbs were used in attempts to prolong the shelf-life of such ale but only the hop, *Humulus lupulus* L., is used in large-scale brewing today. Hops are grown throughout the world solely to meet the requirements of the brewing industry. Hops of commerce are the dried cones of the female plant but today much of the crop is processed into pellets and extracts.

Although hops were probably used first for their preservative value, they introduced bitterness and a pleasant flavour, which was liked, and which is the reason for their continued use. These flavours were found to originate mainly in the resins and essential oils found in the lupulin glands of the hop. From the brewing standpoint the most important hop resins are the alpha-acids (α -acids) sometimes referred to as 'alpha'. In conventional brewing hops are boiled with sweet wort for 60-90 minutes during which time the α -acids go into solution and are isomerized into the iso- α -acids, the main bitter principles of beer.

Now a day, many brewers use such isomerized extracts. Some brewer's uses low levels of hops in the wort kettle to improve utilization, and then achieve the desired bitterness by addition of isomerized extracts after fermentation; others will depend entirely on post-fermentation additions. The isomerized extract must not contain any β -acids as they would be precipitated in the beer necessitating a further filtration with loss of iso- α -acids.

Essential oils are volatile in steam, so most essential oil will be lost when hops are boiled in wort in a wort kettle open to the atmosphere. Brewers may add a portion of choice hops either towards the end of the boil (most lager beers) or add dry hops to the beer in conditioning tank (premium ales) in order to add hop aroma to the beers. The hops used for late and dry hopping are chosen for their choice aroma, which may be transferred directly to the beer. Brewers are usually prepared to pay a premium for such choice 'aroma' hops. The level of α -acids is immaterial since the majority will not be isomerized. Essential oil constituents are soluble in most organic solvents and CO_2 so will be present in most solvent extracts of hops. Today CO_2 extracts, or fractions derived there from, are used to impart hop aromas to beers. Brewers are interested in which constituents of the essential oil influence the flavour of beer and, further, whether the composition of the essential oil can aid the identification of hop cultivars.

Apart from flavours' benefits, the attraction to hops to early brewers appears to have been related to their preservative's qualities, which were particularly relevant before the introduction of refrigeration.

Humulus Lupulus - The Structure of a Hop

The hop cones we use in brewing are the flowers of the hop vine. Everything of use to us in the brewing process, the hop oils and acids, are stored in the yellow **lupulin** glands at the base of each bracteole, or petal. The percentage by weight of each hop cone, after picking and drying, can be approximately broken down as follows:

• Moisture	: 8-11%
• Alpha-acids	: 2-18%
• Beta-acids	: 2-10%
• Essence oil	: 0.4-2.5%
• Tannin	: 2-5%
• Pectins	: 2%
• Ash	: 8-10%
• Protein	: 15%
• Cellulose	: 40-50%

A. Alpha (α)-acid, it puts the bitter in the beer

- Alpha-acids include humulone, cohumulone and adhumulone, and are expressed as a percentage of the total weight of the hop. When isomerized in the boil, these iso-acids become soluble and impart bitterness to beer.
- Alpha-acid content in harvested hops decreases with prolonged storage. So, the alpha-acid stability of a certain variety may be of great importance to a brewer choosing the appropriate hop. Cold-storage, pelletizing, and vacuum packing greatly extend alpha stability.

B. Beta (β)-acid, of a mystery

- Beta-acids are much less soluble in water than the alphas, so their exact bittering effects, if any, on the finished beer are uncertain. They have been observed to contribute greater bitterness to beer once they have been oxidized, hence the ability to extract bitterness from old, oxidized hops despite the disintegration of alpha-acids.

C. Essence Oil

- Hop oils include myrcene, farnesene, humulene, caryophyllene, geraniol and linalool. These oils impart aroma and flavour to beer and are responsible for the aroma of the hops. They are soluble in water and very volatile.
- Myrcene: greater flavour intensity, frequently described as "pungent." The aroma of Myrcene is not considered desirable, so a bit of aging may improve the aroma of hops, even as it diminishes the bittering character of the hops.
- Humulene: imparts a delicate and refined flavour that is often described as "elegant". Highly unstable.
- Linalool and Geraniol: impart a distinct floral character.

D. Tannins

- Tannins help with wort clarification. Some impair the astringency and body of beer, and some are believed to have antioxidative properties in beer.

Many factors can affect the hop character of a specific beer. Bittering resins and essential oils of hop cultivars vary with the year of harvest, source, plant maturity, conditions at the time of picking, processing procedures, storage conditions, and time of storage. Production variables include the variety and amount of hops used, time and place of addition, kettle boil and evaporation, losses during fermentation and filtration, tank blow downs to reduce air content, taste panel perceptions, laboratory analysis, and packaging materials, specifically crown liners.

The brewers are looking for the following attributes in the beer from the hops:

- Hop bitterness
- Hop flavour
- Hop aroma

These attributes are applied in making beer depending upon what kind of beer we wish to produce. It is to be remembered that not all brewing system are equal. So, hop utilization varies from brewery to brewery. Sometimes even from brewer to brewer.

A complete hop analysis is needed to determine correct addition times and rates because, except for some hop extracts, breweries do not receive hops with a uniform bittering and or aroma potential. Because hopping rates are traditionally based on bittering value (α -acids analysis), such rate changes will provide uniformity only in final product bitterness. Therefore, when using aroma hops to impart a specific oil component and quantitatively changes independently of bittering values, it seems reasonably that aroma hopping rates should also be quantitatively adjusted to produce a beer with a more uniform hop character.

A long-established rule of thumb that has been used by some brewers to assess the bittering potential of hop states:

$$\text{Bittering potentials} = \alpha\text{-acids} + \frac{\text{B-acids}}{9}$$

Hop Utilization

The utilization of α -acids (usually referred to as hop utilization) is calculated as follows:

$$\% \text{ Utilization} = \frac{\text{Weight of iso-}\alpha\text{-acids in the wort or final beer}}{\text{Weight of } \alpha\text{-acids added to the wort or beer}} \times 100$$

As the % hop utilization is significantly affected by the choice of analysis methods of measuring α -acids and iso- α -acids and hence care must be taken while selecting analysis method for accuracy of the result. In principle, the most accurate calculation of the utilization will be achieved by using HPLC analysis to measure both α - and iso- α -acids in beer.

Calculation of Hop Additions

The following three examples show very simply how to calculate the quantities of hop products to be added in order to achieve the desired level of final bitterness. It must be remembered that an adjustment has to be made for the variable “perceived” bitterness of the reduced, isomerized downstream hop products, but that this adjustment may vary according to beer type and flavor.

Example 1: Single Product Added into the Wort Kettle

Assumptions:

- Brew length : 100 hl
- Target bitterness : 16 BU i.e., 16 ppm (mg/l) iso- α -acids in final beer
- Hop product : Type 90 pellets at 15% α -acids
- Time of addition : At start of the wort boiling (kettle boil)
- Utilization of α -acids : 30%

Calculation:

(a) Total quantity of iso- α -acids required in 100 hl:

$$\begin{aligned} \text{i.e.} \quad & 16 \text{ BU means 16 mg of iso-}\alpha\text{-acids are available in 1 liter of final beer} \\ & 1 \text{ liter of final beer} = 16 \text{ mg of iso-}\alpha\text{-acids} \\ & 10000 \text{ liters (100 hl)} = 16 \times 10000 \text{ mg of iso-}\alpha\text{-acids} \\ & = 0.16 \text{ kg iso-}\alpha\text{-acids} \end{aligned}$$

(b) Adjustment for utilization (30%):

$$0.16 \times 100/30 = 0.53 \text{ kg } \alpha\text{-acids}$$

(c) Adjustment for α -acids content of pellets (15% α -acids):

$$0.53 \times 100/15 = 3.53 \text{ kg of pellets}$$

Example 2: Two Products, Both Added into the Wort Kettle

Assumptions:

- Brew length : 100 hl
- Target bitterness : 16 BU i.e., 16 ppm (mg/l) iso- α -acids in final beer
- Hop products : Type 90 alpha pellets at 10% α -acids
: Type 90 aroma pellets at 5% α -acids
- Alpha proportions : Alpha pellets — 70% of total bitterness
: Aroma pellets — 30% of total bitterness
- Time of addition : Alpha pellets at start of the wort boiling (kettle boil)
: Aroma pellets 15 min before end of boil
- Utilization of α -acids : Pellets at start of boil — 30%
: Pellets added late — 15%

Calculation:

1. Alpha Hop Addition:

(a) Total quantity of iso- α -acids required in 100 hl:

$$\begin{aligned} \text{i.e.} \quad & 16 \text{ BU means 16 mg of iso-}\alpha\text{-acids are available in 1 liter of final beer} \\ & 1 \text{ liter of final beer} = 16 \text{ mg of iso-}\alpha\text{-acids} \\ & 10000 \text{ liters (100 hl)} = 16 \times 10000 \text{ mg of iso-}\alpha\text{-acids} \\ & = 0.16 \text{ kg iso-}\alpha\text{-acids} \end{aligned}$$

(b) Total iso- α -acids from alpha pellets:

$$\frac{0.16 \times 70}{100} = 0.112 \text{ kg iso-}\alpha\text{-acids}$$

(c) Adjustment for utilization (30%):

$$0.112 \times 100/30 = 0.373 \text{ kg } \alpha\text{-acids}$$

(d) Adjustment for α -acid content of alpha pellets (10% α -acids):

$$0.373 \times 100/10 = 3.73 \text{ kg of alpha hop pellets}$$

2. Aroma Hop Addition:

(a) Total quantity of iso- α -acids required in 100 hl:

i.e. $\begin{array}{ll} 16 \text{ BU means } 16 \text{ mg of iso-}\alpha\text{-acids are available in 1 liter of final beer} \\ 1 \text{ liter of final beer} & = 16 \text{ mg of iso-}\alpha\text{-acids} \\ 10000 \text{ liters (100 hl)} & = 16 \times 10000 \text{ mg of iso-}\alpha\text{-acids} \\ & = 0.16 \text{ kg iso-}\alpha\text{-acids} \end{array}$

(b) Total iso- α -acids from aroma pellets:

$$\frac{0.16 \times 30}{100} = 0.048 \text{ kg iso-}\alpha\text{-acids}$$

(c) Adjustment for utilization (15%):

$$0.48 \times 100/15 = 0.32 \text{ kg } \alpha\text{-acids}$$

(d) Adjustment for α -acid content of aroma pellets (5% α -acids):

$$0.32 \times 100/5 = 6.4 \text{ kg of alpha hop pellets}$$

Example 3: Single Kettle Addition with Tetra Added Post fermentation

Assumptions:

•Brew length	: 100 hl
•Target bitterness	: Equivalent perceived bitterness - 20 mg/l iso- α -acids in final beer
•Hop products	: CO ₂ (kettle) extract - 30% α -acids
	: Tetra-iso-a extract - 10% tetrahydroiso- α -acids
•Alpha proportions	: CO ₂ extract - 85% of total perceived bitterness
	: Tetra - 15% of total perceived bitterness
•Time of addition	: CO ₂ extract - at start of the wort kettle boil
	: Tetra - added in-line before filter
•Utilization of α -acids	: CO ₂ extract at start of boil - 35%
	: Tetra - post fermentation addition - 80%
•Perceived bitterness	: Tetra - 1.6 x normal iso- α -acids.

Calculation:

1. Alpha Hop Addition:

(a) Total quantity of iso- α -acids required in 100 hl:

i.e. $\begin{array}{ll} 16 \text{ BU means } 16 \text{ mg of iso-}\alpha\text{-acids are available in 1 liter of final beer} \\ 1 \text{ liter of final beer} & = 16 \text{ mg of iso-}\alpha\text{-acids} \\ 10000 \text{ liters (100 hl)} & = 16 \times 10000 \text{ mg of iso-}\alpha\text{-acids} \\ & = 0.16 \text{ kg iso-}\alpha\text{-acids} \end{array}$

(c) Adjustment for utilization (30%):

$$0.112 \times 100/30 = 0.373 \text{ kg } \alpha\text{-acids}$$

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	: Tetra - 15% of total perceived bitterness
•Time of addition	: CO ₂ extract - at start of the wort kettle boil
	: Tetra - added in-line before filter
•Utilization of α -acids	: CO ₂ extract at start of boil - 35%
	: Tetra - post fermentation addition - 80%
•Perceived bitterness	: Tetra - 1.6 x normal iso- α -acids.

Calculation:

1. Alpha Hop Addition:

(a) Total quantity of iso- α -acids required in 100 hl:

i.e.
$$\begin{aligned} 16 \text{ BU means } 16 \text{ mg of iso-}\alpha\text{-acids are available in 1 liter of final beer} \\ 1 \text{ liter of final beer} &= 16 \text{ mg of iso-}\alpha\text{-acids} \\ 10000 \text{ liters (100 hl)} &= 16 \times 10000 \text{ mg of iso-}\alpha\text{-acids} \\ &= 0.16 \text{ kg iso-}\alpha\text{-acids} \end{aligned}$$

(b) Total iso- α -acids from CO₂ extract:

$$\frac{0.16 \times 85}{100} = 0.136 \text{ kg iso-}\alpha\text{-acids}$$

(c) Adjustment for utilization:

$$\frac{0.136 \times 100}{35} = 0.389 \text{ kg } \alpha\text{-acids}$$

(d) Adjustments for alpha content of CO₂ extract (30%):

$$\frac{0.389 \times 100}{30} = 1.297 \text{ kg Kettle extract}$$

2. Tetra Addition:

(a) Total quantity of iso- α -acids required in 100 hl:

i.e. $\frac{16 \text{ BU means 16 mg of iso-}\alpha\text{-acids are available in 1 liter of final beer}}{1 \text{ liter of final beer} = 16 \text{ mg of iso-}\alpha\text{-acids}}$
 $\frac{10000 \text{ liters (100 hl)}}{10000 \text{ liters (100 hl)}} = 16 \times 10000 \text{ mg of iso-}\alpha\text{-acids}$
 $= 0.16 \text{ kg iso-}\alpha\text{-acids}$

(b) Total iso- α -acids from Tetra:

$$\frac{0.16 \times 15}{100} = 0.024 \text{ kg tetrahydroiso-}\alpha\text{-acids}$$

(c) Adjustment for perceived (tasted) bitterness:

$$\frac{0.024}{1.6} = 0.015 \text{ kg tetrahydroiso-}\alpha\text{-acids}$$

(d) Adjustment for utilization:

$$\frac{0.015 \times 100}{80} = 0.01875 \text{ kg tetrahydroiso-}\alpha\text{-acids}$$

(e) Adjustment for tetrahydroiso-a-acid content of Tetra product (10%):

$$\frac{0.01875 \times 100}{10} = 0.1875 \text{ kg Tetra-10\%}$$

References:

1. *A History of Beer and Brewing, Ian S. Hornsey*
2. *Brewing – A Practical Approach, Bijay Bahadur, 2016*
3. *Handbook of Brewing, Edited by William A. Hardwick*
4. *Handbook of Brewing, Edited by Fergus G. Priest & Graham G. Stewart*
5. *Handbook of Brewing, Edited by Hans Michael Eblinger*

Barley Wine



Rohit Chauhan

Strictly from a naming perspective, few beer styles are as interesting as Barley wine. In some ways, the name immediately conveys everything you need to know about the style; in other ways, the name couldn't be more inaccurate and misleading. The designation is equal parts on the nose and tongue-in-cheek, lending the style, and the beers within it, to discussion. And Barley wines – as one of the biggest and boldest styles out there – are definitely discussion worthy.

First, the inaccuracies: Barley wines are definitely not wines. Wines are fermented juice from fruits, and as anyone who has ever tried to juice barley can attest to, the grain is pretty liquid free. Barley wine is very much a beer, made of sugars extracted from grains. It is a type of extra-strong ale that has originated in England, but it is now produced worldwide.

So why call them "wines?" Well that's the interesting part: The style earned its name based on the alcohol strengths and complexity – two things that definitely show similarities to wine.

Though there are now a lot of high-alcohol beers, traditionally, Barley wines have been some of the strongest beers on the market with ABVs ranging from as low as about 8 percent and going up to 12 percent or more depending upon the regulations by the local authorities. The first types of barley wine beers probably originated sometime in the 18th century. Keep in mind that before IPAs and Imperial Stouts took over the global craft beer scene, the vast majority of brews fell somewhere in the 4 to 5 percent ABV range, making the alcohol level on Barley wines much closer to what the average consumer would find in a wine instead of a beer – thus the "wine" name. And speaking of that big ABV, those high alcohol levels also mean that Barley wines are one of the few beers that handle aging extremely well – again, like a fine wine.



They were brewed by farmhouse brewers in England. To get to such a high ABV, brewers had to pack more malt, typically barley, into the beer to ratchet up its "original gravity," basically the amount of sugars available to be fermented. All that malt increased sweetness which mean Barley wines also needed an extra helping of hops to keep them balanced. That massive combination of malt, hops and alcohol turned Barley wines into extremely complex beers. These strong, heavy brews were mostly reserved for the aristocracy and were intended to partially replace wine since Britain experienced problems with the most important wine-producing countries. Though the type of complexity found in the style certainly differs from the kinds of notes you'd discuss with a wine, the extent to which this complexity can be analyzed and discussed is certainly similar to wine, creating another association between Barley wine and its fruit-made namesake.

So what are those complexities? Well, Barley wine is typically described in two different forms: The American Barley wine which tends to be hoppier and more bitter, with colors ranging from amber to light brown and the English style wine has a somewhat sherry-like and malty-sweet character with moderate hop bitterness and toffee and dried fruit aroma and flavors with more variety in colour ranging from red-gold to opaque black. Both styles are full-bodied, big, and bold, and all the examples of the style are intended for aging, which tones and mellows the flavors. The first types of barley wine beers probably originated sometime in the 18th century. As the name Barley wine suggests, these are dark, malty beers, elevated by additional alcohol complexity. Unlike many other styles, hops and yeast play a far more supporting role allowing malt (aka "barley") and alcohol (aka "wine") to shine.



Coffee Wine: A Delicious Combination To Try?



AKSHAT JAIN

Business Development Manager-Craft Brewing

Coffee cocktails are nothing new. There's Irish coffee, Caffe Corretto, and many other alcoholic coffee drinks from around the world. But have you heard of coffee wine?

It's a relatively obscure drink that many people aren't familiar with yet.

In this post, we're going to talk all about coffee wine, including:

- what is coffee wine,
- where you can find coffee wine, and
- the process of making coffee wine

By the end, you'll be an expert on this brand-new drink!

What Is Coffee Wine?

Coffee wine is coffee that's gone through the fermentation process. During this process, yeast consumes sugars to create alcohol and carbon dioxide. What's left at the end is a wine that's been made from coffee!

Unlike fruit which contains its own natural sugars, coffee requires sugar and other ingredients to be added to begin the wine-making process.

So, coffee wine isn't just a cup of joe that's been left out for a couple of months. Instead, it's a large pot of coffee that's been prepared specifically for fermentation.

Keep in mind there are a few alcoholic coffee drinks out there that are not the same thing as coffee wine. Specifically, we're talking about:

- coffee liqueurs
- whisky or wine-infused coffees and
- coffee-infused wines

Let's quickly compare each of these to coffee wine so you know what to look out for.

1. Coffee Infused Wine

Coffee-infused wine is a wine with cold brew coffee added. It's made by winemakers and sold in bottles just like regular wine.

There seems to be some confusion out there because a search for coffee wine will also turn up results for coffee-infused wine. (They're not the same thing!)

Coffee-infused wine is a rare and exotic drink that's not widely available. And it's only really sold by a company called Apothic Wines.

Their product, called Apothic Brew, combines the red fruit notes of red wine with the low-key mocha undertone of a cold brew. By comparison, coffee wine contains no fruit.

This drink is generally considered sweet, smooth, and not recommended as a dinner wine.

2. Wine Infused Coffee

Wine-infused coffee is freshly picked coffee beans that have been exposed to wine long enough to absorb the wine's flavor.

It's most often made by letting beans sit in wine and soak up the wine's flavors and alcohol. After the soaking, they're dried and roasted.

The roasted beans retain the wine's fruity flavors but contain no alcohol.

Another method of making wine-infused coffee is to age the beans in casks or barrels that were previously used to age wine. This method will impart fruity red notes to the beans, and the barrel's toasted oak as well, but no alcohol.

Besides red wine, coffee beans can also be infused with whiskey or rum for even more intense tastes.

Source:<https://coffeebreaklovers.com/coffee-wine/>



UPDA TECHNICAL SEMINAR IN NEW DELHI ON 5TH AUGUST 2022



Help Revive the Global Economy by Grabbing a Beer



ESHANT BHARDWAJ

**Business Development Executive,
BECC**

How the beer industry is brewing up sustainable ways to deepen positive impact worldwide

By Fernando Tennenbaum, Chief Financial Officer, AB InBev; Heine Dalsgaard, Chief Financial Officer, Carlsberg; Harold van den Broek, Chief Financial Officer, HEINEKEN; and Tracey Joubert, Chief Financial Officer, Molson Coors.

All over the world, beer brings people together. It facilitates human connections and sits at the core of many celebrations globally. But when you reach for your next brew—whether it be at a party, dinner, cookout or stadium—you may want to take a moment to toast to the way beer supports local economies around the world.

Unlike so much of our modern economy, beer remains an intensely local industry. In fact, some 89% of all beer-sector supplies are produced in the country where the product is sold. Even large companies that operate in many markets generally produce and distribute their product within relatively close proximity to their customers. As a result, brewing delivers outsized economic benefits to local communities through a value chain that stretches from farmers to truckers, mom-and-pop retailers, restaurants, bars and other hospitality locations.

A Formidable Engine of Economic Growth

The recent Beer's Global Economic Footprint report, authored by Oxford Economics on behalf of the Worldwide Brewing Alliance (WBA), is the first of its kind to study beer's global economic impact.

The question now facing us as brewers is how can we find sustainable ways to deepen our positive impact around the world?

What is clear from the report is beer makes a massive contribution to global GDP, jobs and taxes. Beer supported \$555 billion in GDP in 2019—an average of 0.8% GDP per country. The industry also supported more than 23 million jobs and generated \$262 billion in tax revenues for governments. Between its contributions to global GDP, job creation and tax revenue generation, the beer industry truly is a formidable engine of economic growth.

The beer value chain was hit hard by the COVID-19 pandemic, particularly the bars, pubs and restaurants where our consumers came together to enjoy life's moments of celebration and friendship. The millions of jobs powered by the industry depend on people's ability to come together—precisely what the pandemic impacted the most.

Sustained fiscal policy support for the hardest-hit sectors like hospitality is helping, but the ongoing recovery remains uneven. It's not as far along in developing economies, where governments were less able to provide emergency financial support.

Thanks to the report by Oxford Economics, we know beer can play a key role in the economic recovery of these markets, as beer's economic contribution in lower-income countries is even higher than the global average.

Thanks to the Oxford Economics report, we now have a deeper understanding of the global impact of beer and are inspired to continue responsibly contributing to financial recovery as both employers and partners to our communities. The question now facing us as brewers is how can we find sustainable ways to deepen our positive impact around the world?

Using Beer for Good

Brewers intentionally seek out ways to link their value chains to local economies and spread the benefit more broadly. Examples of this include when brewers source ingredients for beer locally, like hops and barley in the United States, cassava in Colombia or sorghum in Nigeria, to brew local brands, or work to bring small businesses in emerging markets into the digital era. Both initiatives can improve productivity across the entire value chain, benefiting the brewer along with local farmers and retailers.

Alongside these economic initiatives, we recognize the growth of the beer industry must always be coupled with a commitment to ensuring our products are marketed and consumed responsibly. This is acknowledged by many governments in their policies nudging consumers toward lower-alcohol beverages, like beer, which can reduce the harmful use of alcohol at the population level.

Brewers of all sizes are recognizing this trend with investments to grow the low- and no-alcohol beer segment around the world. We are also taking these efforts into the supply chain, for example, through programs that equip bartenders and restaurant workers with the skills and tools necessary to provide responsible beverage service.

We are proud brewers and proud to be part of an industry that provides so much to so many people. Beer can encourage economic recovery for the shared prosperity of our communities—supporting the highly productive beer industry elevates economies around the world and, ultimately, helps entire communities and countries thrive. Cheers to that!

Source: <https://partners.wsj.com/wba/br ewing-a-better-tomorrow/help-revive-the-global-economy-by-grabbing-a-beer/>





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Government of India, with the aim to enhance India's energy security, reduce import dependency on fuel, save foreign exchange, address environmental issues and give a boost to domestic agriculture sector, has been promoting the Ethanol Blended Petrol (EBP) Programme. A "Roadmap for Ethanol Blending in India 2020-25" was also released by the Hon'ble Prime Minister in June, 2021 which lays out a detailed pathway for achieving 20% ethanol blending. With all the initiatives taken by the Government, the EBP Programme is on track to achieve the target of 20% blending by 2025-26. AIDA and UPDA recently held a technical seminar and summit, respectively, with a focus on multiple feed stock technology, evaporation and fermentation technology, distillery waste water management, automation and digitalization of distillery and DDGS quality improvement.

The relevance and effects of the DDGS manufacturing method and parameters on the protein, fat, and fibre contents, as well as its role in improving animal feed and animal health, were discussed by the expert in terms of DDGS quality. The misuse of harmful antibiotics to control lactic acid bacteria and as a yeast booster in the fermentation process, as well as its effects on human and animal health and diseases linked to antimicrobial resistance, were also hot topics of conversation among industry experts and distillery owners.

Key important parameters for DDGS quality improvements

1. Protein: DDGS (Dried Distillers Grain in Soluble) is a protein rich diet that has replaced majority of the protein diets in market that includes soybean, mustard and similar items. The digestibility of amino acids in DDGS not more variable than in other feed ingredients with the exception of Lysine considerably because of lysine that may heat damage. Therefore, during the production of DDGS, care should be taken not to damage the lysine in the product by excessive heating, estimate the degree of heat damage in sources of DDGS are needed. In un-damaged DDGS, the concentration of lysine as a percentage of crude protein is between 3.1% and 3.3%, but in heat-damaged DDGS, this percentage can be as low as 2.10% (Stein, 2007). Therefore, the concentration of lysine should be measured before using DDGS in diets fed to swine.

2. Fiber: DDGS is mainly used as cattle feed and is used at low inclusion levels in poultry and swine diets because of high fiber content (Noll et al., 2001; Shurson, 2002). The digestibility of fiber in DDGS and in DDG is less than 20% in the small intestine and less than 50% over the entire gastro-intestinal tract, and the fiber fraction, therefore, contributes relatively little to the energy value of these products. The low digestibility of fiber in distillers co-products results in increased quantities of manure being excreted from pigs fed these products, and the overall dry matter digestibility of diets containing distillers coproducts is lower than in corn-based diets (Pedersen, Boersma, and Stein, 2007a).

Currently, much effort is being directed toward developing feed additives such as enzymes or yeast products that can improve the digestibility of fiber in distillers co-products. If the digestibility improves, the energy value of these products will also improve.

3. Color: The color of DDGS has become a quality factor of great importance for some buyers in the export market, and it is being used to differentiate real or perceived quality and value among DDGS sources. The minimum guarantee (quantitative measure of color e.g. L^* - lightness or darkness of color) currently being used to differentiate lightness of DDGS color is a Hunter L^* greater than 50 to meet some buyers expectations. While many nutritionists perceive that dark-colored DDGS is an indication of low lysine digestibility, the association of color over a broad range of L^* values (36 to 64) with lysine digestibility indicates it is a poor predictor. Furthermore, DDGS sources with a high L^* may indicate greater xanthophyll content, and minimal lipid peroxidation. In contrast, darker colored DDGS sources may have higher concentrations for some nutrients and higher relative phosphorus bioavailability for poultry compared to lighter colored DDGS sources.

4. Antibiotics: Several reports have implicated animal agriculture and the ethanol industry as the main contributors to antibiotic resistance and non-medical misuse of antibiotics (Olmstead, 2009; Meek et al., 2015). Although antibiotic use has been an effective mitigation strategy for bacterial contamination, there is increasing concern about the development of bacterial resistance to antibiotics and transfer of resistance to humans when feeding DDGS to livestock and poultry. Several studies have reported that antibiotic resistant bacteria are present in ethanol production facilities (Lushia and Heist, 2005). Chlortetracycline, erythromycin, and VM are examples of antibiotics that have been used throughout the history of ethanol production. Additionally, several of the antibiotics previously described are no longer being used in the ethanol production industry due to fears of residues being present in DDGS, unknown effects to livestock and poultry that consume the DDGS, and their potential presence in animal-derived food products.

5. Mycotoxins: Like many grain-based feed ingredients, DDGS may contain amounts of mycotoxins that can negatively affect animal performance or be produced and stored under conditions that cause mold growth and mycotoxin production. Mycotoxins can be present in DDGS if the grain delivered to an ethanol plant is contaminated with them. Mycotoxins are not destroyed during the ethanol production process, nor are they destroyed during the drying process used to produce DDGS. If mycotoxins are present in corn, their concentration in DDGS will be increased by 3 times. Furthermore, most ethanol plants monitor grain quality and reject corn sources that are contaminated with mycotoxins. Only approved mycotoxin testing procedures should be used when determining the presence and concentration of mycotoxins in DDGS.

6. Sulfur Concerns: When excess sulfur (greater than 0.40 percent of diet dry matter) is present in ruminant diets neurological problems caused by polioencephalomalacia can occur. Sulfur is reduced to hydrogen sulfide by rumen bacteria and accumulates in the rumen causing toxicity. Some DDGS sources contain high concentrations of sulfur, and if DDGS is fed at a high dietary inclusion rate, depending on the sulfur concentrations in other dietary ingredients and water, polioencephalomalacia can occur. Supplementation of ruminant diets with copper or thiamine may alleviate this problem if high sulfur diets are fed. However, recent research conducted at the University of Minnesota has shown that high sulfur content in DDGS fed to pigs protects against oxidized oil, found occasionally in DDGS sources, by increasing sulfur-containing antioxidants in pigs.

7. Digestibility of Phosphorus: Fermentation results in release of a portion of the phytate-bound phosphorus in corn, which in turn results in a greater digestibility of phosphorus in fermented feed ingredients than in corn (Table 4.3). The apparent total tract digestibility of phosphorus is therefore much greater in DDGS and HP-DDG than in corn, whereas the digestibility of phosphorus in corn germ

is similar to that of corn (Stein, Pedersen, and Boersma, 2005; Pedersen, Boersma, and Stein, 2007a; Widmer, McGinnis, and Stein, 2007). There are no data on the apparent total tract digestibility of phosphorus in other sources of distillers co-products produced from corn or in DDGS produced from sorghum

Different western countries are already started initiatives to produce high protein , less fiber and antibiotic free DDGS. As an example of POET largest ethanol production company announced in 2011 that they initiated changing a portion of their production facilities to operate without the use of antibiotics (Ranallo, 2011). The DDGS produced by the antibiotic-free ethanol facilities can be certified as “antibiotic-free” sells more than 4 million tons of trademarked Dakota Gold DDGS to a variety of animal feed markets, and may potentially improve demand and achieve a higher price/tonne compared with conventional DDGS (Albrecht, 2018). Dakota Gold has a reputation for being the highest-quality DDGS available. They add value in the form of quality protein, highly digestible fiber, amino acids and minerals that your animals need.

Numerous distilleries in India have already begun considering the creation of high grade DDGS as a result of the efforts made by AIDA and UPDA. However, greater initiative is needed from ethanol producers in order to comprehend not only new technology but also the new export market for high-quality DDGS as more grain distilleries enter the market, the more DDGS will be generated.



75TH INDEPENDENCE DAY- BALAJI ENZYME AND CHEMICAL PVT LTD





SIDD BANERJI

**Founder, CEO,
Apex Wine Club India,
Mumbai.**



1987/88 Milan's Press lunch around Xmas. Red was introduced by chef at my table with roasted Turkey.
to 2012

Trotting globe for 10/ 20 years, mostly Europe, grew love for the stylish, aristocratic and historically highly esteemed alcohol called noble and with due mentions in Christianity as well with Jews.

2012-16

As retiring time was neigh, and by that time had studied, visited and learnt absolute basics. Never realised delivering a talk at the international wine fest, Bengaluru, 2012 Or meeting, drinking and learning from my first mentor, Swiss, Schurtz, organising my 11 days' wine tour of Italy, shall push me from inside, to know, and create on wines so much.

One from primarily Sales, Marketing, Advertising and Journalism back ground, it was a smooth sail into the tiny Indian wine world. I had by that time, seen quite much of the world from Las Vegas to Tokyo on wines and for my business, metallurgy to oil & gas, gems and jewellery included

2016

Became the first Outstation Life Member of Nagpur Wine Club, the largest in terms of number of members, initiating the idea of accepting members from outstation too. (Rarely our other 7 wine in India clubs do that.)

2018

Learning from them, guided and encouraged by my mentor, founder, Chman of the club, I launched the first pan India and a bit more, wine club on 4 pillars, edu., training, news and culture.

I strongly believe, wine is an institution, with wide learning scope, scopes for research and exploring while bring an extra ordinary partner in joy, celebration and to reach state of ecstasy.

Business, earning, being a boy born out of Bihar(now Jharkhand) have had enough. Watching world around, often I complain, He has mistakenly given me more than I deserved.

I'm proud, hundreds today smile and say, "thanks Sidd".

HOW TO CLEAN WINE GLASSES



MAMTA BHARDWAJA

Wine glasses are specially designed to enhance the wine tasting experience. So it is important to learn how to clean them properly.

First of all clean your wine glasses immediately after your party. If you are tired and going to clean your stemware next day, at least fill the glasses with water to avoid staining.

Use hot water to clean your wine glasses, but be careful while using soap or detergent. Always use mild, perfume free soap because they can leave a strong odor, which interferes with the aroma and bouquet of wine. This happens particularly with crystal because it is porous and can absorb the soapy aroma easily. So if you are using soap, wash the glass thoroughly with hot water to remove all soap residues.

Vinegar is also used to clean wine glasses, because it removes stains easily and makes glasses sparkling clean. Also lemon juice can be used as it contains natural acid.

Use sponge to clean your glasses, particularly a sponge with handle so you don't have to put your hand in glass. Take care while cleaning the rim of glass, as it is delicate and can break easily. While cleaning the handprints on bowl, gently scrub the sponge. And then wash the glass 2 – 3 times thoroughly with warm water.

Always hold the glass by the bowl while cleaning, so you can clean the bowl as well stem and the base of glass. And there are very less chances of breakage.

Wash one glass at a time. After washing leave the glass to air-dry upside down on soft towel Or you can use fragrance -free paper napkin.

So be gentle with your stemware and take care of them to enjoy your glass of wine next time.

Cheers!!!!

WINE REPORT



KANCHAN SINGH

Chapter Head - South Delhi, India

Apex Wine Club India

1 August 2022, Monday

According to estimates, the size of the global honey wine market is expected to grow by USD 317.31 million from 2021 to 2026. Besides, the market will grow at a compound annual growth rate of 9.7 per cent during this period.

The growth of the honey wine market will be affected by the health benefits of wine. Besides, the increase in use of online sales channels will also support the growth of the honey wine market.

The global honey wine market is fragmented due to the presence of various domestic and international participants.

The major vendors which operate in the honey wine market include B. Nektar Meadery, Bored Beverages, Brothers Drake Meadery, Cerana Meads, Etowah Meadery Corp., Humble Bee Wines, Martin Brothers Winery, Medovina, Moonshine Meadery, Real Beer, Redstone Meadery, Rosewood Estates Winery, Schramm's Mead, The Honey Wine Co. LLC, Wandering Bard Meadery, and Wild Blossom Meadery and Winery.



Increase profits in BIOETHANOL ... Naturally

"VitaHop C" A natural antimicrobial product from the BetaTec® application arm of Barth-Haas Group, the USA, the world's oldest and largest hop company, which can protect the yeast from Gram positive bacterial growth and acid by-products during bioethanol fermentation processes.

The Product portfolio includes natural fermentation aids, antibacterials, flavours and functional ingredients. Our key business areas are alcohol, yeast and sugar production. All BetaTec products are accompanied by on-site support, process optimisation and consulting.

VitaHop® C

Global Certification

- Food grade
- Halal
- Kosher
- GRAS



Natural Hops-Derived
Antibacterial Fermentation
Aids for Global Fuel Ethanol
Production

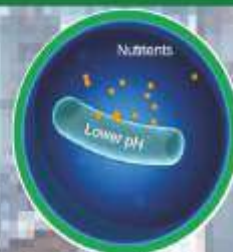
Key Benefits of Vitahop® C

- Maintains optimum ethanol yields
- Ensures reliable fermentations
- Keeps yeast healthy
- Controls bacteria
- Demonstrated benefits in ethanol production plants worldwide
- Safe and natural, easy to use
- Safe DDGS for animal feed
- A Natural alternative to antibiotics

How It Works

Inhibits bacteria's glucose intake, without affecting yeast activity.

These natural acids are absorbed by the bacteria cell and lower its pH. This inhibits the cell's ability to transfer glucose through the cell wall. In essence, bacteria commonly found in ethanol production are starved to death. They cannot eat, multiply and therefore they die. Our hop products control bacteria, but have no effect on yeast activity. In fact, without competition from bacteria, yeast do their job more effectively and alcohol yield benefits!



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