BrewTimes™

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Balaji Enzyme and Chemical Pvt Ltd

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Introducing BrewTimes :

We M/s Balaji Enzyme & Chemical Pvt Ltd, are pleased to bring to you our February 2022 month edition of BrewTimes.

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.

In our expert section of BrewTimes we bring to you the various applications of spent grain barley protein by Mr Bijay Bahadur.

Our association with M/s Bioneemtec India Pvt Ltd, is for R&D and they are our sample testing partners. We bring an opportunity for all our valuable customers and encourage them to utilise this association which will help them in testing their raw material and finished products quality standards.

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.

IIT Bombay Research Park Foundation-ASPIRE
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1 week ago

Come February and we have the second company joining the Research Park in 2022 - Balaji Enzyme & Chemical Pvt Ltd.! Looking forward to bringing innovative solutions and a revolution in the food and beverage industry.

Indian Institute of Technology, Bombay
Ministry of Food Processing Industries
MINISTRY OF EDUCATION, GOVERNMENT OF INDIA
Kameshwari Mangalampalli Abhay Kainya

#research #innovation #technology #enzyme #chemical #food #foodindustry #foodandbeverage #india

IIT BOMBAY
RESEARCH PARK
aspire

Balaji Enzyme and Chemical Pvt Ltd

Aromahop® OE

Aromahop® OE provides the brewer with an economical means to deliver light-stable, variety non-specific, hop aroma to beer. It is processed by the removal of the α-acids and most of the β-acids from CO_2 hop extract, resulting in an easy-to-use hop extract that adds hop aroma to beers.

Aromahop® OE can be used for various objectives. One kilogram of Aromahop® OE contains hop oil approximately equivalent to that contained in 15 kg of hop pellets. When added to the brewkettle late in the boil, Aromahop® OE will contribute hop aroma to both light-stable and traditionally hopped beers. As with traditional hops, the brewer can vary the final aroma profile in the beer by changing the timing and quantity of the Aromahop® OE addition. Beer that is packaged in clear or green glass demands a light-stable hopping regimen. However, most light-stable hop bitterness products do not contribute aroma. Aromahop® OE is a cost-effective option to add back the hop aroma that may be needed in these specially formulated beers. Furthermore, with regard to excess kettle foam that sometimes causes problems for the brewer with brews that receive only post fermentation hopping, an early brewkettle addition of Aromahop® OE will help to knock down foam during the boil, enabling the brewer to maximise brew kettle capacity and brewhouse throughput by maintaining an efficient boil.

Product Specifications:

Description:	Dark yellow/brown to dark green or black paste which is liquid at temperatures above 60 °C (140 °F); at lower temperatures material is semi-solid.
Hop oils:	Oil content will vary depending on hop varietal characteristics, but will exceed 25 mL/100 g.
Density:	0.9 – 1.1 g/mL
Iso-α-acids:	< 0.2%
β-acids:	< 10%

Quality and Food Safety:

BarthHaas maintains quality management systems registered to the ISO 9001 standard, as well as food safety management programs based on internationally recognised (HACCP) principles. Please refer to our web site (www.barthhaas.com) for more information on our systems and programs.

Product Use:

An initial addition rate of 1 kg of Aromahop® OE per 400 hL of beer added to the brewkettle 15 minutes before knockout is suggested as a starting point to conduct brewing trials. Since flavour and aroma are subjective and dependent on the overall character of the beer, adjustments to either the quantity of Aromahop® OE or the timing of the addition are then to be determined by the brewmaster. To reduce kettle foam, the addition of 0.3 kg Aromahop® OE per 100hL wort at the beginning of the kettle boil is recommended. Aromahop® OE should be stirred thoroughly before use to ensure that is homogeneous. Gentle warming of the container to not more than 50 °C may assist this.

Packaging:

The standard package size of Aromahop® OE is 3.5 kg pails. Larger package units are possible on request.

Storage and Best-by Recommendation:

Store Aromahop® OE in full, closed containers at 15 – 25 °C (59 – 77 °F). We recommend usage within 24 months after processing. Aromahop® OE is stable at room temperature and therefore does not require refrigerated storage to maintain quality.

Analytical Methods:

- EBC 7.8 for hop-acids by HPLC
- ASBC Hops-16 for hop acids
- EBC 7.10 for hop oils
- ASBC Hops-13 for hop oils

Safety:

Any material coming into contact with the skin should be washed off with soap and water. For more information download the relevant Safety Data Sheet (SDS).

Technical Support:

We will be pleased to offer help and advice on the use of Aromahop® OE in brewing.

Barley Protein with Focus on Spent Grain Protein

BIJAY BAHADUR

B.Sc. (Hons.); B.Tech. (Gold Medallist); PGDEE; FIE; Chartered Engineer (India) PE (ECI); LMIIChE; LMAFST (I)

Introduction

Barley is the most commonly used grain in the brewing industry for the production of beer. Both raw barley and malted barley are used, often in combination with adjunct grains such as rice and corn. As spent grain is the most voluminous by-product of the brewing industry, the valorization and utilization of spent grain protein is of great interest in terms of sustainability.

There is an ongoing global effort to minimize processing waste and increase up-cycling of processing side-streams in order to support sustainable growth in the year ahead. However, sustainability in the brewing industry is complex. The potential valorization of spent grain is of great economic interest. Due to its high nutritional value, particularly in terms of high-quality protein, the application of spent grain proteins in human nutrition is of particular interest. The addition of spent grain has already been examined in breads, biscuits and other bakery products as well snack-type products.

In addition to this, applications of BSG include use in animal feed formulation for a range of species as well as use as a potential substrate for other industrial processes, namely biogas production, polysaccharide extraction and phenolic compound isolation.

Barley Proteins

• ***Hordeins/Prolamins***

The majority (30–50%) of the barley protein fraction consists of hordeins, a protein belonging to the prolamin group, so named due to their high content of glutamine and proline.

• ***Glutelin***

Glutelin is the second most abundant fraction in barley storage proteins, making up 35–45% of the total storage protein. It contains high levels of glutamine, proline and glycine, while also being rich in other hydrophobic amino acids.

• ***Protein Z***

Protein Z is the major barley albumin. Protein Z is a member of the serpin protein group and represents about 5% of total barley albumin. However, protein Z is heat stable and resistant to enzymatic degradation, meaning it survives the brewing process unmodified and is one of the major proteins still present in the finished beer, with a particular role regarding beer foam stability alongside lipid transfer proteins.

Effect of Brewing Processes on Barley Proteins

The brewing process significantly alters the proteins of the grains. An understanding of the changes to barley proteins that occur during malting and mashing is key to determining how these processes affect the final protein composition of spent grain as well as the residual beer proteins.

• *Malting*

Malting is the controlled germination of the barley grain. During malting, partial degradation of the cell walls, starchy endosperm and storage protein occurs. Adequate modification of the grain constituents during malting is key to the final quality of the beer. Insufficient modification can cause issues such as low extract yields and low fermentability.

• *Starch Degradation Inhibition*

Insufficient protein degradation during malting has been shown to inhibit the degradation of starch during the mashing process. Due to this, starch degrading enzymes (namely α-amylase) have limited access to the starch granules, therefore limiting the production of fermentable sugars.

• *Mashing*

Mashing is the first step in the brewing process and continues the enzymatic degradation that began during the malting of the barley grains. During mashing, a significant fraction of grain proteins is degraded and solubilized, and through wort boiling, they are glycated and coagulated to form aggregates that can be separated during wort boiling as 'hot trub'.

• *Residual Beer Proteins*

Many studies have focused on comparing the protein profiles of malts with the protein profiles of the final beer product. On examination of the precipitated protein in the 'hot-trub', indicates that the enzymatic degradation of proteins established during malting continued throughout mashing.

Overview of BSG

Brewers' spent grain (BSG) is the most abundant by-product of the brewing process, consisting of up to 85% of total brewery waste. Due to an ever-increasing interest in waste reduction and by-product valorisation, the fractionation and application of BSG-derived ingredients is an expanding field of study.

• *General Characterization of BSG*

BSG is what remains of the initial brewing grains after being subjected to the malting and mashing processes. Therefore, it consists of mainly the husk–pericarp–seedcoat, meaning BSG is rich in both cellulosic and non-cellulosic polysaccharides, as well as lignin. While rich in fibre, it is also rich in protein, with the protein fraction accounting for approx. 19–30% of total grain composition.

As well as a high protein content, BSG also contains a high level of essential amino acids. These essential amino acids constitute approx. 30% of the total protein, and lysine is of particular interest, as it is generally the limiting amino acid in cereal foods for human consumption. Essential amino acids are crucial for human health and can be lacking in certain foods, therefore requiring fortification. Due to the presence of a high level of essential amino acids, BSG-derived proteins as fortification agents in foodstuffs for human consumption present an economical solution to these issues.

Due to the very high-water content of BSG at the point of production (approx. 80%), the transportation and storage of BSG for use as animal feed presents a challenge in minimizing microbial growth that may cause illness in animals, as well as general material degradation. Drying is the most commonly employed methods of stabilizing wet BSG by reducing microbial growth. However, from an economical and cost standpoint, oven drying was determined to be the most effective methods for removing moisture from BSG and stabilizing the product.

• Adjuncts

Adjuncts are ingredients, other than malted barley, used in brewing to provide additional carbohydrates to contribute to sugars in the wort.

The protein contents of adjuncts can greatly affect wort quality. The balance between adjuncts and malt must be carefully monitored as adjunct addition can 'dilute' the enzymatic activity of the malt, therefore requiring a malt of a higher diastatic power or the addition of commercial enzymes.

Due to the frequent use of adjuncts in the brewing industry, the analysis, extraction and utilization of brewers' spent grain protein is not only dealing with barley proteins but also potentially those of adjuncts used in the brewing process.

• Rice Protein

Rice is a commonly used adjunct in brewing to produce a light and clean tasting beer. Due to its low cost and high starch content, it is used to supplement the carbohydrates available from the barley and malt, leading to increased fermentative capability. Rice proteins have shown to be significantly resistant to hydrolysis. As a result, the addition of a rice adjunct provides very little free amino nitrogen (FAN), and this must be compensated for by the barley and malt fractions.

• Maize Protein

Maize is another grain extensively used as an adjunct in the production of beers. In a similar way to rice, the high volume of starchy endosperm serves to supplement the sugars provided by the barley and barley malt alone for a more efficient and economical production process.

Extraction of Proteins from BSG

In order to utilize each of the valuable components of BSG, methods for separating the fractions must be determined. Some of the potential protein extraction methods include alkaline extraction, acid extraction and filtration, as well as more novel techniques such as ultrasonic treatment and pulsed electric field treatment.

Applications

• Animal Nutrition

Due to its high protein and fibre content, BSG is most often used as a component of animal feed as either a wet or dry feed.

The BSG as a source of protein in aquafeeds as a sustainable alternative for fishmeal and oil to reduce reliance on marine resources. Both the hydrolysed and non-hydrolysed BSG proteins have shown good digestibility and would be a suitable fishmeal alternative, improving economic and environmental sustainability.

• Food Applications

The implementation of brewers' spent yeast in bakery products has been worked synergistically with other compounds to improve nutritional and/or technological functionality. BSG addition to foodstuffs can improve protein content significantly but can also drastically increase levels of dietary fibre, which is very desirable for human health.

• Biscuits

The use of protein isolated from brewers' spent grain has the potential for use in bakery products to improve nutritional and functional properties. This addition improved the overall flavour and nutritional value of the cookies.

• Bread

The use of BSG and fermented BSG in the fortification of bread has been accepted because of increase in nutritional value with regards to protein, dietary fibre and minerals which makes BSG a very interesting raw material for food product fortification.

• Snacks

Dried and milled BSG has been used as a means to increase the protein content of extruded snacks in combination with wheat flour, corn starch and other ingredients and extruded using a twin-screw extruder.

Conclusions

The increasing interest in sustainability and economizing product has led to an increased emphasis on the reuse and valorisation of brewing by-products. As brewers' spent grain is the most abundant by-product from the brewing industry, the valorisation and utilization of spent grain protein is of great interest, particularly in terms of sustainability. BSG is currently extremely underutilized and is mainly used in animal feed formulations due to its low cost and high nutritional value. High levels of essential amino acids in the proteins could be useful in nutritional and functional food applications for human consumption.

BSG by-product, which has a low monetary value, as a high-nutrient biomass, will enhance the economic potential of breweries and improve the dietary attributes of food formulations such as bread, biscuits and snack-type products. BSG protein hydrolysates have been found to have increased functionality, including enhanced solubility, foaming and emulsification properties. These hydrolysates have also shown potential to enhance nutrient bioavailability as well as an increased antioxidative and reducing capability. All in all, BSG protein and its hydrolysates have significant valorisation potential, especially with regards to applications in the food industry.

How to calculate boil kettle adjuncts to increase final wort gravity.

SAURABH N. PERKAR

HEAD BREWER
B.TECH CHEMICAL ENGINEER
BREWMASTER
BROTHER BARLEY BREWING COMPANY

Boil kettle adjuncts addition is the most economic way to increase final wort gravity post boil. It's been useful to balance production cost for higher gravity beers.

Boil kettle adjuncts are separated by form and color contribution. As we know all of boil kettle adjuncts get diluted well in wort so brewing efficiency doesn't apply here while calculation. So for example if we are providing 46 gravity point in wort so it will increase 46 gravity points during boil.

Let's have look at some boil kettle adjuncts and their color and flavor contribution.

1. Brown sugar

Brown sugar comes in dark and light color with SRM of 50 and 8 respectively. And their gravity point contribution is 46 points.

2. Dry malt extracts

This are categories by SRM value of self. Extra light will provide 3 SRM, light 8 SRM, amber 12.5 SRM and dark 17.5 SRM. All above mentioned will provide 44 gravity points except dark will provide 36. Because while preparing dry malt extracts which is basically made by evaporation of dark wort will not have that much gravity points because used more specialty malts.

3. Syrup

They are made from corn, fruits and maple and molasses. So we have to be careful here because gravity point vary from 36 to 46 and SRM 0 to 80 depending on base material used to make it.

4. Lactose and honey

Lactose is choice of many brewers to add body to final beer because lactose doesn't get consumed by many yeast strains.

On other side honey provide a nice character to final beer if fermented till dry. Here SRM and gravity points contribution from honey and lactose are 1 SRM and 0 SRM respectively with 36 points gravity.

Now how to calculate quantity required of adjuncts to increase gravity.

Let's take an example
We are brewing 5 hl batch where our pre boil volume and gravity are 600 liter and 1.044 sg Our evaporation volume is 50 liter/ hour. We did 1 hour boil so our estimate post boil volume and gravity are 550 liter and 1.048 sg. Difference between pre boil and post boil gravity depends on intensity and

diameter of boil kettle. And our target gravity is 1.057 sg.

So step by step we have to divide final volume to 3.785 and value come gets multiplied by difference of target and existing gravity.

Now keep this value aside and multiply by extract potential value of adjunct which is in this case is sugar and use 46 multiply by 2.205 .

Now we have two values from first step and second step now. Now divide step 1 value by step 2 value and you get quantity of sugar to use in kg which in this case comes 12.8 kg.

We can use this steps for any adjucts of choice but have to consider post boil volume and gravity with adjuncts. Target gravity and extract potential of adjuncts.

USES OF DEXTROSE MONOHYDRATE AND DEXTROSE ANHYDROUS.

Mr. GOPAL DHANDE

ANTIBIOTICS – Being totally fermentable, dextrose monohydrate is the ideal carbohydrate source for antibiotic production. As dextrose monohydrate is very pure, there is minimal post fermentation clean up of both the and the effluent.

BAKERY – Being totally fermentable, it can be used in making bread and other fermentable doughs, where it can replace sucrose as energy source for the yeast.

Dextrose can be used to sweeten whipped dairy cream which is to be used in bakery products. During the manufacturing of a whipping cream, stabiliser such as an alginate is added to stabilise the foam. This stabiliser addition can be reduce the perceived sweetness of the whipped cream, therefore dextrose monohydrate is added to compensate for this loss of sweetness without making the cream excessively sweet. The addition of dextrose monohydrate will also increase the microbiological stability of the cream, by increasing the osmotic press within the water phase of the cream.

BROWNING AGENT – Dextrose monohydrate can be used to encourage the browning of foods. One example is its use in the preparation of fried foods, particularly chips and french fries.

CARRIER – Dextrose monohydrate can be act as a carrier for flavours. A typical example could be an instant tea, where it makes up 80%of the recipe, and carries 7% of tea soluble solids, with the remainder being citric acid, acidic regulator, artificial sweetener and a free flow agent.

FEEDSTOCK – Dextrose monohydrate is the feedstock to produce the sugar trehalose and polyol erythritol, both by fermentation.

FOUNDRY WORK – Dextrose monohydrate can be used to act as a binder in foundry sand, where it increases the green strength of the sand moulds.

HORTICULTURE – Dextrose monohydrate can be used as feed for cut flowers.

INDUSTRIAL FERMENTATION – Being totally fermentable and very clean, dextrose monohydrate is the ideal feedstock for most fermentation.

MEAT PREPARATION – Dextrose monohydrate or dextrose anhydrous can be used in brines or pickling solutions for curing hams3. Historically, ham brines contain a mixture of nitrates and nitrites, but for the "curing" activity, nitrite is required, which is produced by bacterial action on the nitrate to produce nitrite. The bacteria need a substrate for growth, so sugar or dextrose is added. Dextrose is preferred when a less sweet cure is required, or if the perticular bacterial strain used prefers dextrose as the substrate. Dextrose is also used in pate to increase the shelf-life.

PLASTICS – Dextrose monohydrate is the raw material for the production of methyl glucoside, which in turn can be used to make rigid urathane foam.

SORBITOL AND ASCORBIC ACID PRODUCTION - Sorbitol is produced by the catalytic hydrogenation of dextrose syrup. For maximum plant efficiency and minimal costs, it is important that the dextrose syrup contains maximum dextrose contains, now 97 to 98 % can be achieved by using proper enzyme. For producing extra pure quality of sorbitol dextrose monohydrate solution prepared in de-ionised water or r.o water is used.

Ascorbic acid – vitamin C, is produced by the fermentation of sorbitol to sorbose, followed by chemical oxidation and acid treatment to produce ascorbic acid – vitamin C.

SWEETNESS / FLAVOUR MODULATOR - Because dextrose is less sweet than sucrose, it can be used to balance the sweetness and flavour in a product.

TABLETING – Dextrose monohydrate is used in several different types of tablets, from the confectionery thirst quenchers and energy tablets to pharmaceutical tablets. In these applications, the dextrose monohydrate acts as a sweet bulking agents and a soluble carrier for flavours or the active pharmaceutical ingredient. Additionally, the cooling effect of a dextrose monohydrate tablet will enhance the flavours, specially mint.

TANNING – Dextrose can be used to replace sodium sulphite as the reducing agent in the tanning of leather, when using chrome alum.

INTRAVENOUS DRIPS – The sugar circulating in the human bloodstream is dextrose, and it is the energy source for the body to function. In critical situations where the body requires a steady supply of dextrose for its survival, a dextrose solution will be administered by an intravenous drip. The dextrose for this application must pass the pharmaceutical standards of purity, with the dextrose solution being both sterile and bacterial endotoxins test pass.

ORAL REHYDRATION – This application is for people suffering from dehydration due to diarrhoea. Since this condition frequently arises in third world countries, the dextrose is dry mixed with sodium chloride, trisodium citrate and potassium chloride, and then packaged into sachets. Each sachet is then dissolved in a little of potable water, prior to being drunk by the dehydrated person.

THESE WINE PROFESSIONALS STARTED VIRTUAL BUSINESSES DURING THE PANDEMIC—HERE'S WHAT THEY'VE LEARNED

VASHNAVI WAKHRE

Pre-pandemic, wine enthusiasts of all levels would travel the world to visit exotic wine regions, finedining restaurants, and experience the best of what the world of wine has to offer. Since March 2020, the shutdown of so many bars, restaurants, wineries, and tasting rooms meant that sommeliers and wine professionals were forced to become spontaneously creative with virtual wine tastings. While shelter-in-place measures have been lifted over the last several months, social distancing measures have forever altered the way that wine can be experienced in person.

Luckily, several businesses have been established to bring a unique, immersive tasting experience to the comfort of consumers' homes.

Hospitality veteran Haley Moore turned her side-hustle into a full-time endeavor in January 2020, shortly before the pandemic began. When restaurants closed in March 2020, Moore lost the majority of her income, and transitioned to virtual experiences as a temporary solution. To grow her audience, Moore created food and wine packages and shared them with private clients and restaurant guests she had cultivated over the years. "I could've never foreseen what a transformative experience it would turn out to be," Moore says. "In 2020, we hosted 5,000 guests in 20 different countries and all 50 states – all via Zoom." Acquire-Wine.com, which launched in 2013, also provides concierge services to clients who need recommendations for their private cellars. "The intention is to apply the same level of Michelin star sommelier service by giving our members an elevated retail experience," she says.

For virtual tastings, Moore and her team have created tasting packages with a unique selection of wine and food pairings. From tasting aromatic whites and new world reds paired with artisanal cheeses and rustic crackers, to cooking a creamy white truffle risotto paired with a clean and crisp Puligny Montrachet, Acquire invites guests to try their hand (and their palate) at something new. Moving forward into 2022, Moore is launching a chef series called "A Moveable Feast," featuring celebrity chef-curated menus and allowing guests to purchase the cooking kits and participate in the live online event or receive the recording after the conclusion of the event. "The virtual space has felt like a real restaurant to me for some time now," Moore says. "When you're doing a virtual event, you can command the space in a different way, which leads to countless potential connections. It is truly the greatest way to develop future business."

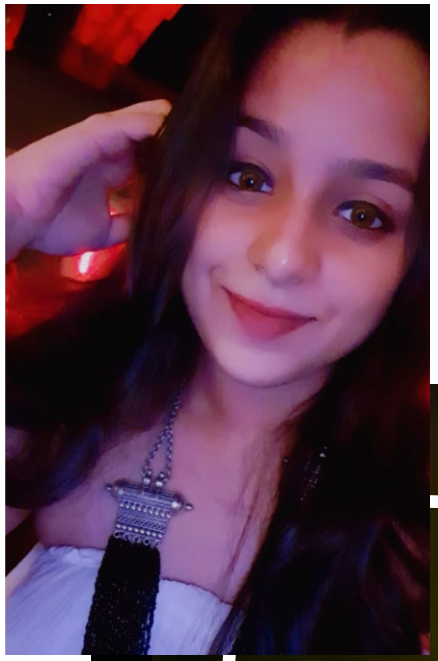
Like Moore, certified sommelier and wine educator Brianne Cohen quickly learned that there is something special about connecting with people virtually that can't always be achieved in person. As shelter-in-place mandates were enforced nationwide, Cohen began marketing an online tasting experience–Virtual Vino–to her social media audience, which resulted in 120 people on a Zoom call. "I realized at that moment I had something. For 12 weeks, after the live event side of my business was decimated, I hosted weekly online wine tastings that were free or low-cost and marketed to the public," she says.

Cohen did such a great job promoting her tastings that in June 2020, she started receiving requests for private tastings with corporate clients. "Since March 2020, I have taught over 150 virtual wine tasting classes, have seen over 6,000 people on my zoom screen and doubled my gross annual revenue from what it was in 2020," she says. "I now have a team of five people supporting me, so that I can focus on my core competency of delivering fun and approachable wine tasting experiences."

While interest in virtual experiences has grown substantially, business owners remain cognizant of issues that impact the entire industry—like the current supply chain disruption. For Alexandra Schrecengost's business Virtual With Us, the challenge of shipping and delivering amidst delays, shortages, and other logistical hiccups has been both an advantage and disadvantage.

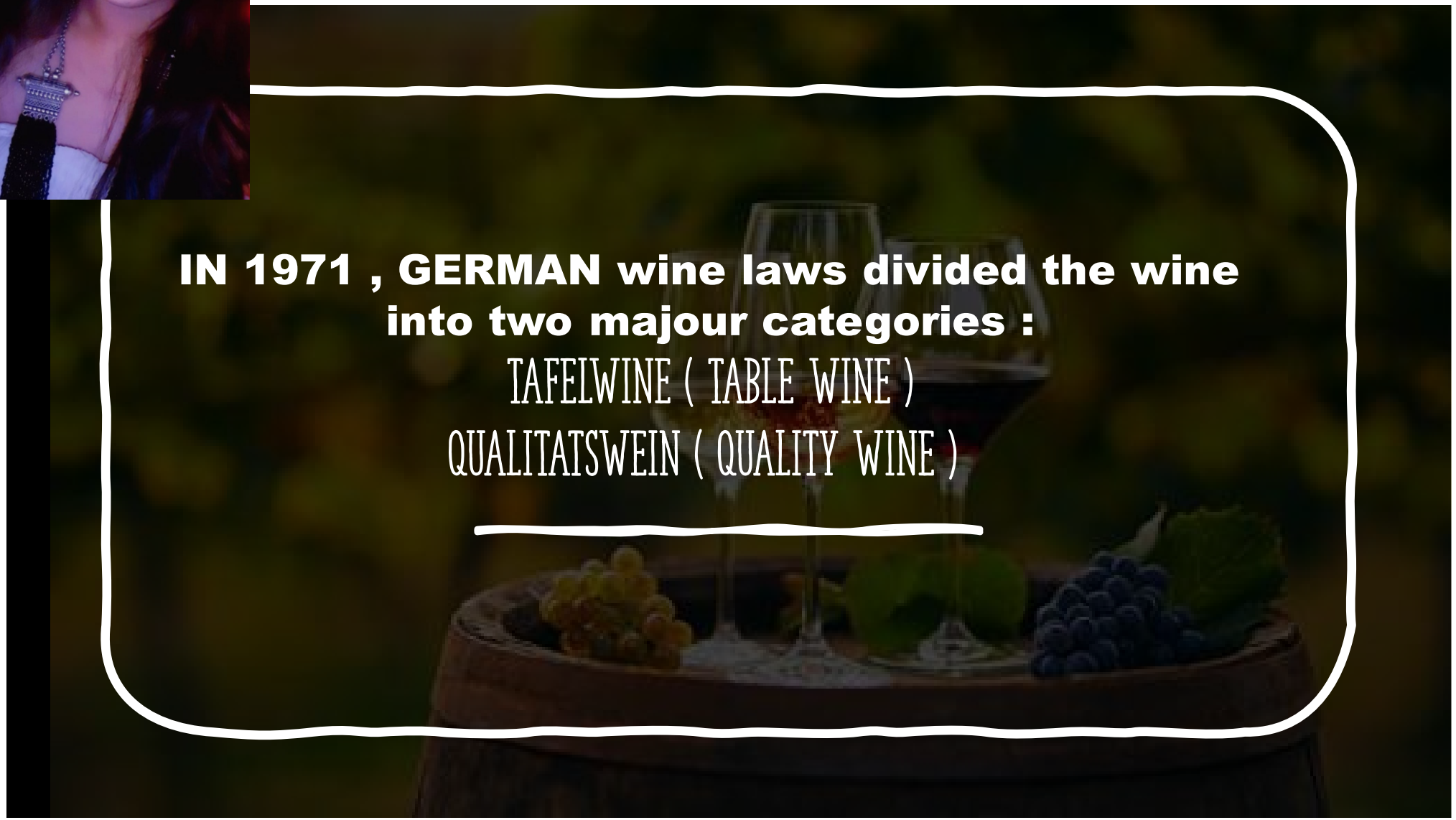
“They’ve caused us to develop contingency plans for all kinds of situations, which have resulted in a quick and thorough mastery of our supply chain that keeps clients serviced and happy,” she says. While wine tastings remain the most popular of the company’s events, Schrecengost has extended her offerings with Culture With Us, curated cultural gift boxes that feature items from women and minority-owned brands from around the world. As more companies continue to relax their in-person attendance requirements, Schrecengost finds that her customer base is more loyal than ever and excited to learn what kinds of new hybrid programming they’ve developed precisely for these remote and hybrid office models.

“I predicted that our business wouldn’t be affected by the resumption of indoor gathering, and that turned out to be correct,” she says. “It’s a very exciting time to be in this space because it is the most inclusive and provides an opportunity to accommodate different kinds of people and activations."



SHRADHA SINGH

Member - APEX WINE CLUB



TAFELWEIN
(TABLE WINE)

TAFELWEIN
(TABLE WINE)

THIS CATEGORY CAN BE SUBDIVIDED INTO :

> Deutscher tafelwein (german table wine)

This is the basic table wine made from grapes grown in germany. There is a also a simple tafelwein made – a euroblend from a mixture of german and and other eu grapes

> Deutscher landwein (germany country wine)

Similar to the french vin de pays , it is superior to the deutscher tafelwein and will have a slightly higher alcohol content the wine Is dry or semi dry and can be produced in any one of 17 designated landwein areas

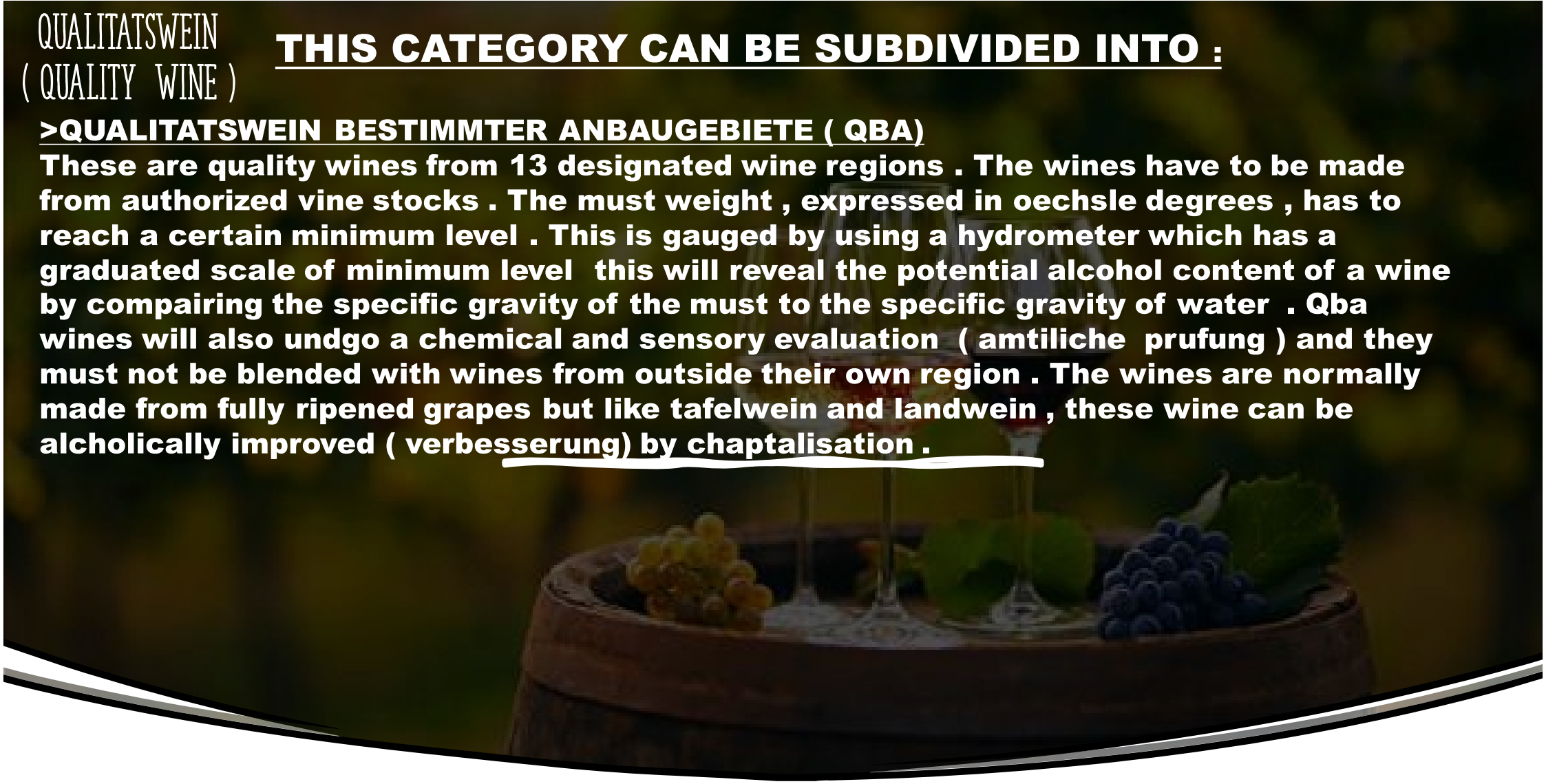

QUALITATSWIN
(QUALITY WINE)

QUALITATSWEIN (QUALITY WINE)

THIS CATEGORY CAN BE SUBDIVIDED INTO :

>QUALITATSWEIN BESTIMMTER ANBAUGEBIETE (QBA)

These are quality wines from 13 designated wine regions . The wines have to be made from authorized vine stocks . The must weight , expressed in oechsle degrees , has to reach a certain minimum level . This is gauged by using a hydrometer which has a graduated scale of minimum level this will reveal the potential alcohol content of a wine by compairing the specific gravity of the must to the specific gravity of water . Qba wines will also undgo a chemical and sensory evaluation (amtiliche prufung) and they must not be blended with wines from outside their own region . The wines are normally made from fully ripened grapes but like tafelwein and landwein , these wine can be alcholically improved (verbesserung) by chaptalisation .



QUALITATSWEIN (QUALITY WINE)

THIS CATEGORY CAN BE SUBDIVIDED INTO :

>QUALITATSWEIN BESTIMMTER ANBAUGEBIETE (QBA)th

These are quality wines with an added distinction or embellishment . They are completley natural wines – no sugaring of the must is allowed .

The greatest wines produced in germany fall into the following six categories of quality :

1.Kabinett
2.Spatlese
3.Auslese
4.Beerenauslese
5.Eiswein
6.Trockenbeerenauslese

WINE REPORT

KANCHAN SINGH

Chapter Head - South Delhi, India
Apex Wine Club India
1 January 2022, Sunday

Chardonnay is right for winter during winter rains. Straw-yellow, yellow-green, or yellow-gold in colour, it is produced by the alcoholic fermentation of the pulp of grapes, which can be of any colour. Chardonnay is presently the most widely planted white grape variety in the world. It surpasses Spain's Airén and Italy's grape, Trebbiano.

Balaji Enzyme and Chemical Pvt Ltd

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