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OUR VALUES

- C** - Customer Oriented
- A** - Adaptability
- T** - Team-work
- A** - Ambitious
- L** - Learning Attitude
- Y** - Yes to Life
- S** - System Driven
- T** - Taking Initiative
- S** - Self-Discipline & Integrity

Catalysts CONNECT

Jan-Jun 2021 VOLUME-36 Issue No.1



Providing
innovative and
sustainable
solutions

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Certifications:



Microbial
production of
enzyme and their
application

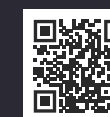
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Some facts about Beer

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OUR VISION

"A Globally acclaimed company creating value for all stake-holders by providing innovative and sustainable solutions."



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CORPORATE PROFILE

Founded in 2003 in India, The Catalysts Group is an Indian Biotechnology company, focused on offering wide range of enzyme based eco-friendly solutions to many industry verticals in India and Overseas. The company leverages latest technology trends and disruptive approach to create process-based enzyme formulation. The goal is to provide measurable outcomes to its customers, across industries and sectors by offering a gamut of enzymes solutions, from strategy to execution.

Over 17 years and with more than 140 crores in, Catalysts is well on its way to become a global brand in the Industrial Biotechnology space in this decade. With a reach already spanning 3 continents, 10+ countries and 400+ cities globally and a clientele that's rich in industry-leading companies, the company has traversed the evolution from an Indian to an Asian and soon a Global company. Catalysts is focused on generating employment opportunities through manufacturing and delivering centers across globe and focusing on safeguarding the environment.

Dedicated team consists of highly qualified, dynamic, passionate and experienced research professionals. They have the capability of delivering robust results for customer centric requirements. Catalysts team always strives to use innovative tools and technological advancements to stay abreast with the rapidly changing industry scenarios and to meet the customer's evolving needs. Having acquired quality certifications like ISO9001:2015, FSSC 22000, NABL, HALAL and Kosher, our Research and Development Centre has been recognized by the Department of Scientific and Industrial Research (DSIR).

With real time processes and troubleshooting support, we provide our customized solutions and services to a variety of industrial verticals like:

MOLASSES

SUGAR

STARCH

MALT EXTRACT

BREWERY

GRAIN PROCESSING

AGRICULTURE

ANIMAL NUTRITION

For more information, please visit:

<https://www.thecatalystsgroup.com/>

or email us at: marketing@thecatalystsgroup.com

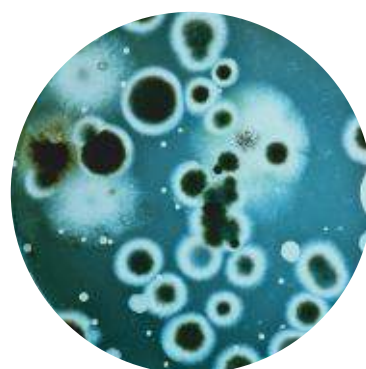


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EDITORIAL

MESSAGE FROM THE MANAGING DIRECTOR



Hello Friends,

Welcome to the next edition of our Catalysts Connect Magazine, which brings us to an end of a very challenging financial year 2020-21. It started with a complete lockdown paralyzing most of the businesses in the first six months taking the global economy into recession. Since October, with Covid cases declining and the easing of restrictions, Catalysts Group (especially in the Indian market) has witnessed a sharp recovery in the market sentiments and thereby business. Now with availability of vaccines and improved knowledge of managing this disease, we all look forward to welcoming the new financial year 2021-22 with expectations of high growth.

In the closing financial year, we at Catalysts worked extremely hard to reverse the degrowth in our revenues suffered in the first quarter of 20-21. This was achieved successfully by the end of the second quarter. Since then, we have been growing at a record pace and will be closing this financial year with high double-digit growth. A good harvesting season for sugarcane crops in western India and continuation of favourable Ethanol policy of Indian Government has helped us. All our teams have worked extremely hard to achieve this growth.

There have been numerous challenges, but our core values of hard work and persistence helped us to not only overcome all of these challenges, but also made us more resilient and determined to achieve our goals. I would like to take this opportunity to salute the commitment of each member of our Catalysts family, for keeping interests of the organisation ahead of even their lives. It gives me a great sense of pride to be part of such a wonderful, motivated and determined team.

I also would like to thank our clients, principals and vendors for continuing to extend their trust and unconditional support. It would not have been possible to achieve this feat without their support and trust.

Recently, Indian Government has advanced its goal of achieving an Ethanol blending target of 20% from 2030 to 2025 by including Ethanol produced from various grains in their incentive program. This will lead to a huge surge in capacity addition for Ethanol production in India. We have re-aligned our strategy to remain focused to our core strengths and achieve 500 Cr+ revenues by 2025.

My best wishes to everyone for success in the next financial year.
May this year bring health, happiness and progress for everyone!

Munish Madaan

FEATURES



CHALLENGES FACED BY FERMENTATION INDUSTRY IN ETHANOL PRODUCTION DUE TO BACTERIAL CONTAMINATION.



Contributed by:
Divya Pandey
Senior Research Associate I
Research and Development



Ethanol production holds a potential global market in Fermentation Industry. Due to its scale and unit processes, several enzymes have been used for the hydrolysis of starch substrates to maintain the fermentation process under aseptic conditions. Sterilization of this treated starch substrate is not feasible at the large-scale production. Most of the ethanol production are carried out in the presence of measurable amount of bacterial contamination. This leads to the reduction in the production of ethanol yield and generally inhibit yeast growth and its activity. Several studies reported that the presence of 106-107 bacterial count leads to the loss of 1-3% of ethanol production while 107-108 bacterial count can lead to the loss of 3-5%. Other study reported the loss of 17% in ethanol yield in presence of 4.5 X 10⁸ bacterial contaminants per ml in the batch fermentation for 30 hrs.



This problem can be reduced by using continuous processes instead of batch process to increase the productivity but still the bacterial contamination is becoming serious issue day by day. Since ancient times, bacterial contamination is one of the major drawbacks possess by the ethanol fermentation industry in terms of reduction in the ethanol yield and the annual output. Incapability to tackle and control the bacterial contamination, several fermentation plants went under complete closure overseas.

Due to the recently developed microbial and molecular techniques, this has become possible to isolate, biochemically characterize and identify these bacterial microorganisms in the lab scale. Molecular identification provides a high throughput pipeline to identify and characterize the bacterial contamination with complete bacterial gene sequence. With this information, we can develop and suggest specific products to address microbial challenges with precise dosages required to run the fermentation. This workflow will be helpful in maintaining the best possible high yield of commercial ethanol.

Sr. No.	Biochemical Characterization	Micro organisms					
		<i>L. fermentum</i>	<i>L. casei</i>	<i>B. subtilis</i>	<i>P. aeruginosa</i>	<i>E. coli</i>	<i>C. perfringens</i>
1.	Esculin Hydrolysis	Negative	Positive	Positive	Variable	Variable	Variable
2.	H ₂ S Production	Negative	Negative	Negative	Negative	Negative	Positive
3.	Indole production	Negative	Negative	Negative	Negative	Positive	Negative
4.	Nitrate Reduction	Positive	Negative	Positive	Positive	Positive	Variable
5.	Glucose	Negative	Negative	Positive	Positive	Positive	Positive
7.	Starch Hydrolysis	Negative	Negative	Positive	Positive	Negative	Variable
8.	Gram staining	Positive	Positive	Positive	Negative	Negative	Positive

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Vos, Paul, George Garrity, Dorothy Jones, Noel R. Krieg, Wolfgang Ludwig, Fred A. Rainey, Karl-Heinz Schleifer, and William B. Whitman, eds. *Bergey's manual of systematic bacteriology: Volume 3: The Firmicutes*. Vol. 3. Springer Science & Business Media, 2011.

GOOD MANUFACTURING PRACTICES



Contributed by:
OP Shukla
Head
Production



GMP describes to the Good Manufacturing Practice regulations promulgated by the US Food and Drug Administration under the authority of the Federal Food, Drug, and Cosmetic Act. The GMP, also refers as cGMP, practices have the force of law, that insist manufacturers, processors, and packagers of drugs, medical devices, and food to take proactive steps to ensure that their products are safe, pure, and effective.

GMP regulations require a quality approach to manufacturing that enable companies to minimize or eliminate instances of contamination, mix-ups, and errors. This protects the consumer from purchasing a product which is not effective or even dangerous. GMP regulations address issues including record keeping, personnel qualifications, sanitation, cleanliness, equipment verification, process validation, and complaint handling. Most GMP requirements are very general and open-ended, allowing each manufacturer to decide individually how to best implement the necessary controls.

GMP have been developed by the Codex Alimentarius with the main objective of customer protection. GMP is a system for ensuring that products are consistently produced and controlled according to quality standards. It is designed to minimize the risks involved in any production activities that cannot be eliminated through testing the final product. It establishes the

operational conditions and requirements necessary to ensure hygiene throughout the food chain and for the production.

To simplify this, GMP helps to ensure the consistent quality and safety of products by focusing attention on five key elements, which are often referred to as the 5 P's of GMP—people, premises, processes, products, and procedures (or paperwork).

Good Manufacturing Practices (GMP) is important to ensure that businesses produce safe products to the public. Businesses in the food industry have a legal and moral responsibility to prepare food/products those are safe for the consumer. By not implementing adequate GMP, a food business can risk several negative consequences that includes recall, seizure, fines, and imprisonment.

We at M/S Catalysts Bio Technologies Pvt. Ltd. effectively implementing GMP practices and it is evident from the certification we received from various certification bodies such as ISO 9001: 2015, FSSC 22000:2018 Ver.5, Halal, Kosher, Aditi Organics. etc after thorough audit of the production facility followed by verification of the process methodically and after meeting the successful compliances to the specified requirements.



GOOD MANUFACTURING PRACTICES YIELD GOOD QUALITY

10 Golden Rules of GMP:

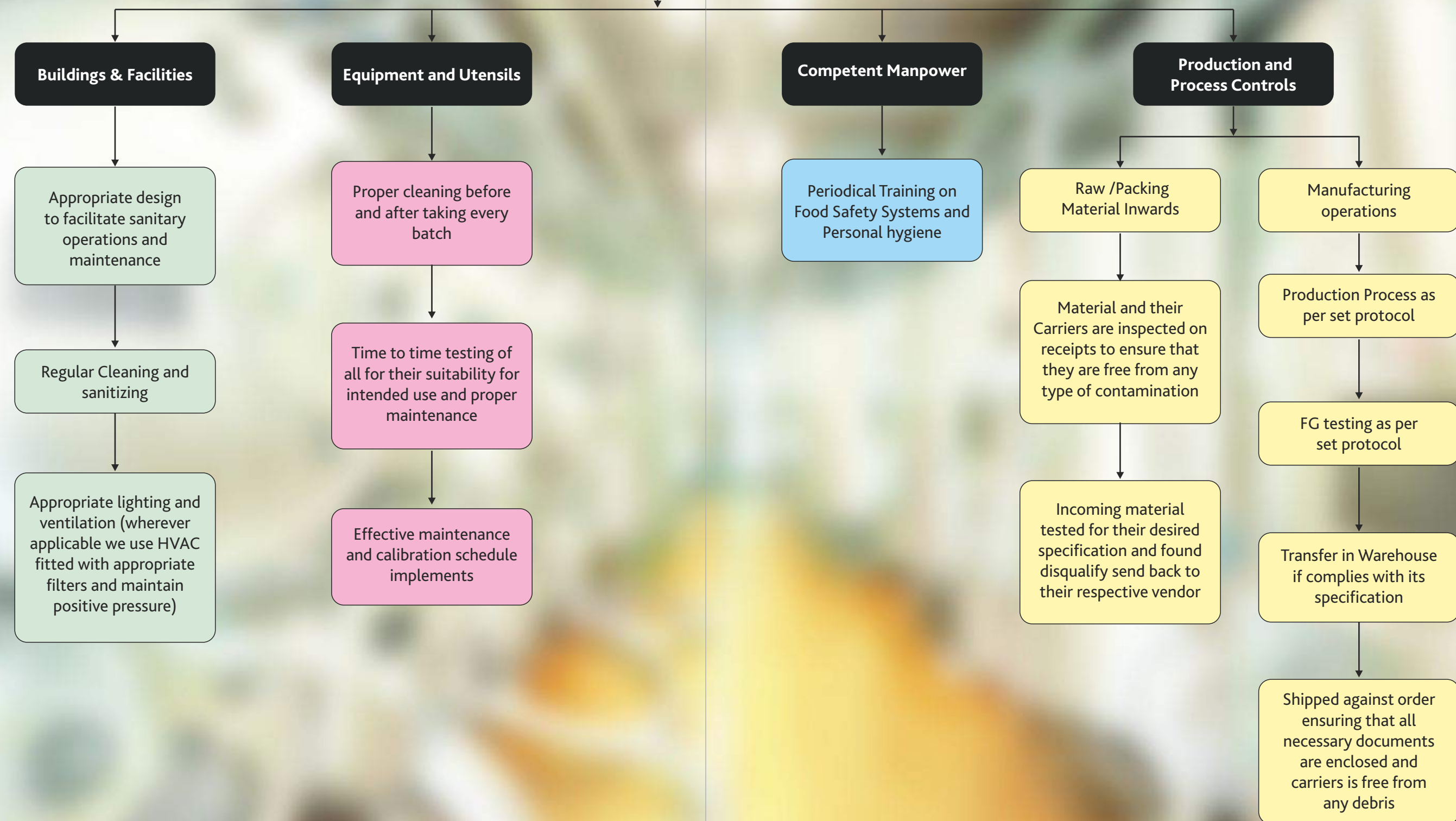
- 1 Get the facility design right from the start so that it suits to your requirements
- 2 Validate processes.
- 3 Write good procedures and follow them.
- 4 Identify who does what.
- 5 Keep good records.
- 6 Train and develop staff.
- 7 Practice good hygiene.
- 8 Maintain facilities and equipment
- 9 Build quality into the whole product life cycle
- 10 Perform regular audits to identify the gaps or improvement points

Table 1.0 Examples of potential recipes in % extract



Production GMP Flow

Chart for Manufacturing



MICROBIAL PRODUCTION OF ENZYME AND THEIR APPLICATION



Contributed by:
Dipti Verma
Application Department
Senior Research Associate

Microbial fermentation is well known traditional process for decades. Over the past few years, the fermentation process has been used to produce many value-added products including enzymes, organic acids, alcohols, polymers. Due to widespread application of enzymes in different industries (food, textile, and agriculture, pharmaceutical, leather, and detergent) increased the interest of biotechnologists to establish the economically feasible process.

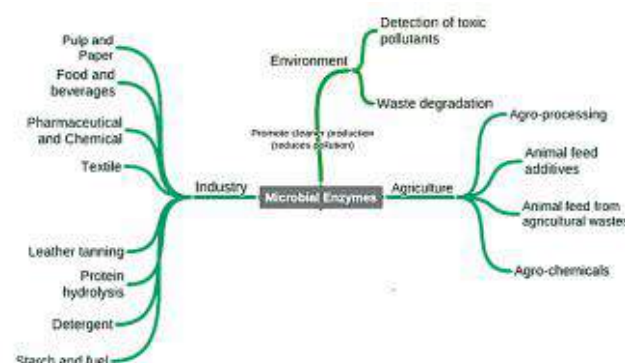


Fig1: Application of microbial enzymes in different industries

As evident from previous studies, enzyme production using the fermentation route is eco-friendly. Microbial production of enzymes over plants or animal sources has many fundamental advantages. The main advantages are (i) it can be produced on large scale in limited space and time (ii) extraction and purification of an enzyme using microbial route is easier (iii) enzyme yield can be increased using genetic modifications. Enzymes can be produced intracellular or extracellular by a microbe. Most commonly produced enzymes on large scale such as amylase, proteases, catalase from bacteria, yeast, and fungi respectively are still used in different industries.

S.no.	Enzyme	Source	Used in different Industry
1.	α -Amylase	Bacteria, fungus	Starch industry, textile industry, food industry brewing industry
2.	Cellulases	Fungus	Food industry, bakery industry, biofuel industry, biofuel industry.
3.	Invertases	Yeast	Food industry
4.	Lipases	Yeast, fungus	Food dairy, polymer industry, detergent processing industry
5.	Proteases	Fungus, bacteria	Cosmetic industry

Table1: Industrially important enzymes obtained from different microbes.

Different techniques involved in the enzyme production selection of microbes, strain improvement to enhance the enzyme activity high and downstream to purify the quality product. Microbial production of enzymes has the potential to provide a viable solution to many industries. As an attractive and emerging technology, this area still needs to explore for successful application for the large scale.

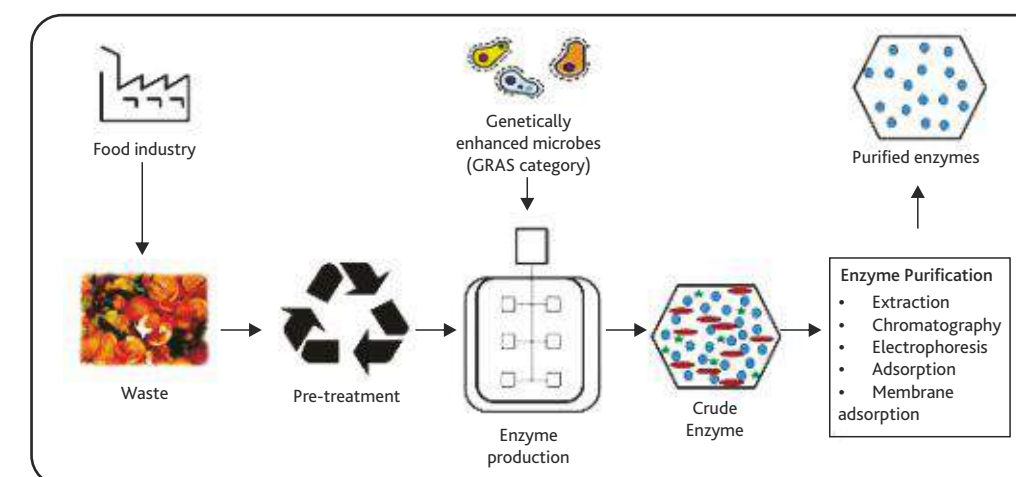


Fig2: Process for enzyme production using food waste via genetically modified microbes and enzyme purification techniques (ref-google image).

References:

Viswanath Vittaladevaram, Fermentative Production of Microbial Enzymes and their Applications: Present status and future prospects. Journal of Applied Biology & Biotechnology 2015 (90-094). Qais Ali Al-Maqtari, Waleed AL-Ansi, and Amer Ali Mahdi, Microbial enzymes produced by fermentation and their applications in the food industry -A review. International Journal of Agriculture Innovations and Research 2019 (2319-1473)

Global concern for energy security issues increased the interest of workers in finding alternate clean energy sources owing to the fast depletion of conventional energy resources that are mainly based on fossil fuels. As evident from recent studies where hydrogen is touted to be one of the cleanest sources of energy and is considered as most significant over other energy forms due to its high net calorific value (2.75 times higher than gasoline). Also, the burning of hydrogen as a transportation fuel does not release any greenhouse gas. It can be used in jet engines, internal combustion engines, and fuel cells for conversion to energy. Currently, hydrogen is mainly produced from carbon-based non-renewable source that raises a great concern of rising Green House Gas emissions during the process

of production [1-3]. Hence global attention shifted towards the generation of hydrogen from alternate non-renewable sources. In this regard, hydrogen production through biological processes holds significance as these pathways do not rely on conventional petroleum-based resources and can be operated at ambient conditions. Biohydrogen production through the use of microbes is characterized broadly into four different categories: bio photolysis, dark fermentation, photo-fermentation, and electro-fermentation. Among all these processes, dark and photo-fermentation routes considered suitable for hydrogen production from different carbohydrate and organic acid-based feedstocks, respectively.

SUGARCANE SYRUP PRESERVATION



Contributed by:
Dr. Pavan
Head
R&D



India is the 4th largest producer of ethanol after United States of America (USA), China, Brazil having more than 300 distilleries with a production capacity of about 3.2 billion litres mainly by fermentation of sugarcane molasses. Out of the total available ethanol, about 45% is used for potable liquor, about 40% is used as industrial solvent in chemical industry and for blending in fuel and for other applications. There is a continuous growth in demand for ethanol in India due to growth in industrial applications and its use as blending agent in fuel. However, the production capacities are lagging with respect to the market demand for the ethanol and the amount of ethanol currently being produced in India is not sufficient to meet domestic demand. The ongoing efforts to reduce the fuel import burden on the country, the Central government decision to increase the blending percentage of alcohol in petrol encouraging the ethanol producers to increase their capacities and to explore alternate feedstock for ethanol fermentation. This enabled sugar mills to produce ethanol by diverting cane juice towards ethanol production and availability of ethanol for the Ethanol Blended Petrol (EBP) programme. The support from government to provide higher compensation price for ethanol produced from sugar juice or syrup and B molasses would aid in reducing excess sugar stocks and impacting the sugar industry capacity to pay arrears to sugarcane farmers. All sugar mills/ distilleries are planning to take to take benefit of the scheme by participating in supply ethanol for the Ethanol Blended Petrol (EBP) programme.

Molasses is the key by product of sugar industry and is one of the main feedstocks for ethanol production while

going forward sugarcane juice and syrup are going to play a significant share as feedstock in ethanol fermentation that may include primary/secondary/ mixed/clear juice and syrup which has concentrated juice with total dissolved solid content more than 50 Brix. Clarified sugarcane juice, from the milling section, is concentrated to 60 brix in the falling film evaporation section to convert juice into syrup. Operating the distillery throughout the year is the challenge with out the storage of raw material for off-season, though cane juice can be used during season, it is very difficult to maintain its sugar content as well as keep it free from microbial contamination in the most compact manner. However, the cane syrup could be stored and utilized as a raw material for off-season consumption (90 days operation).

Challenges in syrup preservations:

► Solubility:

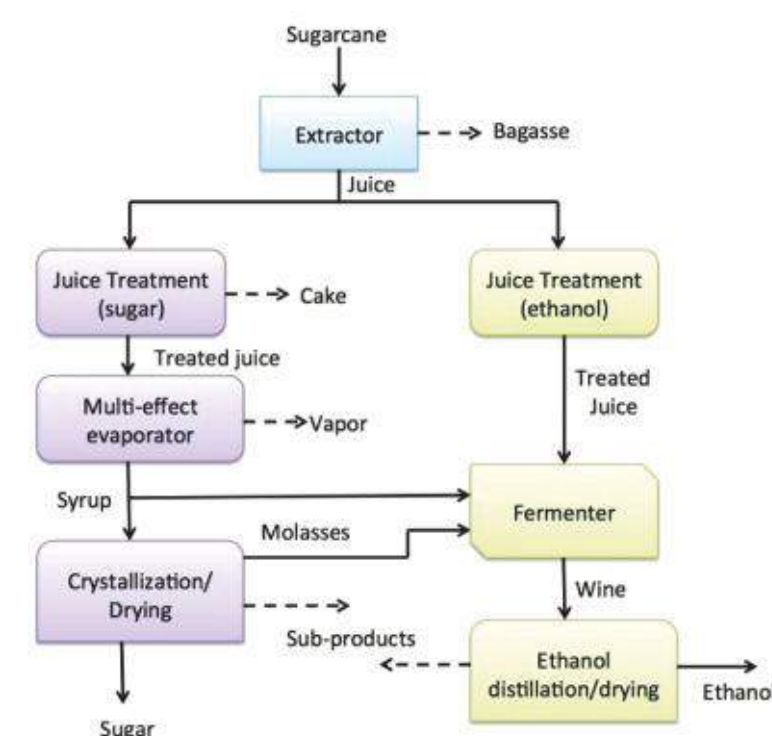
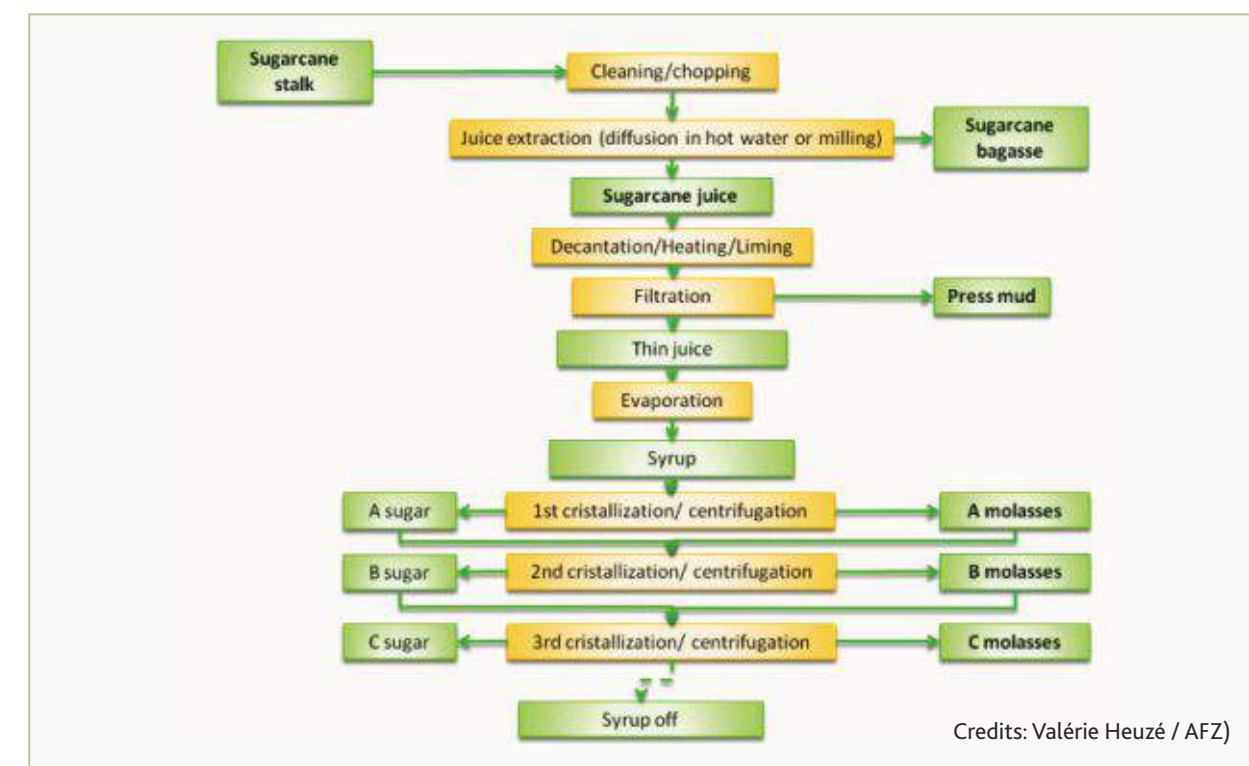
The Solubility of Sucrose changes with varying temperature and at low temperatures the sucrose might get crystallized in syrup.

► Stability:

The sucrose tends to breakdown into monomers, which are more susceptible for microbial degradation. The pH is an indicator for microbial degradation and is also evident from formation of by-products such as gluconic acid, Lactic acid, and Acetic acid.

Numerous preservation methods being investigated by researchers for the sugarcane syrup consists of chemical, thermal, and non-thermal methods that includes usage of enzymes prior to storage. Enzymes will also be dosed in the storage tank at regular intervals for achieving extended shelf life of cane syrup. Simultaneously, the stored syrup will be cooled by recirculation with a provision of inert gas blanketing in the storage tank head space to avoid contamination

when the syrup comes in to contact with air. It is also proposed to consume syrup on first-in, first out basis. We at Catalysts, has Govt of India approved in-house Research and Development centre, working on development of syrup storage process with the help of our proprietary enzyme formulations to provide cost effective tailor-made solutions to industry and our valuable customers.



Schematic of process of sugarcane to produce ethanol and sugar.

(Credits: John A Dutton)

Complete ENZYME SOLUTION For SUGAR & MOLASSES Industries

Enzylase

- Improves clarification
- Reduces overall viscosity & ensures improved pan boiling

Enzydex™

- Improves filtration & crystallization
- Reduces overall viscosity
- Improves bagging recovery

Alphas 1

- 80-90% replacement of phosphoric acid
- No effect on sugar concentration
- Offers improved solid-liquid separation

EnzySweet

An advanced and effective biocide against basic commodity biocides



Enzymol™ Protect

(Product for Molasses Preservation)

- Increases Molasses shelf life
- Controls bacterial proliferation & milliard reactions during storage thus controls VFA content & sugar deterioration

Enzymol Protect™ Advance

Solution for B- Molasses Preservation

- Effectively increases Molasses shelf life thus preventing any revenue losses.

Enzypro™ M

(Efficiency Boosters for Molasses Fermentation)

- Increase in recovery of alcohol in continuous fermentation.

Enzymol Plus™

(Efficiency Booster for Molasses Fermentation-Batch/FED Batch)

- Increases yield of alcohol in fermentation
- Reduction in spent wash ratio

Oxzy Treat

Process to reduce the concentration of organic compounds (COD) in MEE condensate. More than 80% recycle of MEE condensate to fermentation can be assured. Helps to increase ethanol yield during fermentation by reducing the microbial contamination.

Sweet Treat A & B

- A unique advanced oxidation process used for treatment of excess process condensate in sugar mills
- Effectively reduces the COD and BOD level of the process condensate.



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LIFE AT WORK





The word organization have had ever changing & evolving definitions since;

1707- what that is organized

1829- An organized body of persons

1873- system, establishment, constitution

2021- a company, institution or an association comprising one or more people and having a particular purpose.



Contributed by:
Sheetal Nagar
Executive Assistant

HOW CULTURE DEVELOPS

An organization's customs, traditions, rituals, behavioural norms, symbols and general way of doing things are the visible manifestation of its culture; they are what one sees when walking into the organization. Prevailing organisation culture develops due to the factors that have worked well for the organisation in the past.

Though culture emerges naturally in most organizations, strong cultures often begin with a conversation among leaders from across the organization. Once the culture is framed then organisation makes sure that the desired culture is alive and maintained, by first hiring people who live the values and have the competency needed to perform the job.



Factors that shape up organisation's culture

Most company cultures are not that different from one another. Even organizations in disparate industries tend to share a common core of cultural values. Some of the cultural characteristics that distinguish most organizations includes:

VALUES-Organisation culture is commonly shared values but organizations decide which values they will emphasize.

DEGREE OF HIERARCHY-The degree of hierarchy is the extent to which the organization values traditional channels of authority.

DEGREE OF URGENCY- The degree of urgency defines how quickly the organization wants or needs to drive decision-making and innovation.

TASK ORIENTATION- An organization with a strong task orientation tends to put tasks and processes first when making decisions and believes that efficiency and quality drive organization performance and productivity.

FUNCTIONAL ORIENTATION- Every organization puts an emphasis on certain functional areas. Examples of functional orientations may include marketing, operations, research and development, engineering or service. For example, an innovative organization known for its research and development may have at its core a functional orientation toward R&D.



TYPES OF CULTURE

Its culture is defined as a set of important understanding that the members share in common, comprising, set of values, ideas, perceptions, preferences, concept of morality, code of conduct which create a pyramidal distinctiveness among the group who are part of the organization. Essentially an organizational culture is the values, behaviour and shared vision that contributes to the environment of an organization. All essential shall work in close tandem/synchronization within each other, across organizational pyramid and changing paradigms of evolution of shared vision of profitable business. Many concepts have evolved over years on the most suitable organizational cultures namely:

1. **Clan culture**- Family like culture, people friendly & respectful to each other, leaders as mentors, emphasis on team building and employee involvement. Such organizations' have robust long term HR approaches to encourage teamwork and inclusions and keep a strong emphasis on loyalty and tradition.
2. **Adhocracy culture**- Dynamic creative work environment promotes freedom and individual innovations, employees encouraged to experiment and offer new ideas and leaders are seen as risk takers; Aim is to grow and create new products, success for them is to anticipate market needs and develop new solutions to meet that demand.
3. **Market Culture**- Getting things done, competitive nature among employees and even leaders, rivalry and reaching goals are key words and steadfast focus is on winning. Leaders are hard drivers & success is measured by market penetration and stock.

4. **Hierarchy Culture**- driven by strict institutional procedures wherein leader job is to ensure employees follow the procedures correctly. Primary goals are on smooth execution results and low costs.

But organizational culture in today's ever changing volatile markets carry a tag "no concept fits all". Almost all organizations' uses a mix bucket as per their suitability, incorporating an overall rationale of a healthy mix of all concepts in their policies for measurable results and impacts across all verticals of an organization, giving employees at each pyramidal level opportunities to growth in their financial and professional levels for personal and organizational growth, which is of paramount importance for everyone being associated with the organization.

It also becomes imperative for today's leaders driving the organizations to evolve like seedling graduating to a fruit bearing tree and develop a mechanism wherein the food is transported to each leaf at whichever level of the tree.

Reference Link:

<https://www.managementstudyguide.com/organization-culture-articles.htm>

<https://www.shrm.org/resourcesandtools/tools-and-samples/toolkits/pages/understandinganddevelopingorganizationalculture.aspx>

<https://www.sciencedirect.com/science/article/pii/S187704281101620X>

COMMUNICATION



IMPORTANCE OF CORPORATE COMMUNICATION IN ORGANISATION



Corporate communications are the way in which businesses and organizations communicate with internal and external various people. These people commonly include:

- ▶ Customers and potential customers
- ▶ Employees
- ▶ Key stakeholders
- ▶ The media and general public
- ▶ Government agencies and other third-party regulators

In this digital world, corporate communication is one of the important factors that regulate whether companies thrive or fail. It impacts employee's productivity, innovation, brand awareness, and more.



Contributed by:
Rajat Sharma
Sr. Associate
Corporate Communication



Brand Awareness

Earlier, agencies used to rely chiefly on marketing for promoting and brand awareness. However, the marketing enterprise has been diminishing over the previous few years. Millennials mostly pass commercials due to the fact that they don't favor being offered to. Instead, they prefer to instruct themselves.



The most high-quality way to appeal to your audience's interest is to use content material that educates them. That is the place worker approval comes in. External verbal exchange in the shape of worker advocacy is one of the finest approaches to enhance company awareness. Employee advocacy increases your company's social media reach. If five hundred of your employees share an article on LinkedIn, and each of them has a thousand connections, that's an extra attain of 1/2 a million humans for your brand! Moreover, many people, especially millennials, have faith persons as a substitute than companies. They are a way extra possibly to pay interest to a tweet from one of your personnel alternatively than from your reputable employer handle. Higher manufacturer attention interprets into extra leads and greater revenues. Therefore, company verbal exchange has a clear and direct influence on your company's economic growth.

Boosting Employee Engagement

90% of corporate leaders know for a reality that employee engagement is a fundamental factor in enterprise success. The intent is certainly pretty simple: any person who enjoys their job is of course going to work harder, operate higher, and remain longer. Additionally, they will encourage and motivate their colleagues to do the same. Companies that have excessive charges of employee engagement are typically true at one thing - inside communication.



There are many ways to approach to use corporate communication to boost employee engagement. Here are a few key ones:

Communicate Vision and Goals

Communicating your company's top-level desires with the whole agency helps personnel join their everyday duties to the larger picture. This fosters a precious sense of meaning in their jobs - which encourages them to make a contribution more.

Encourage Opinions and Dialogues

Encourage your employees to voice their ideas, opinions, and worries on an employee communication platform like Smarp. This leads to stimulating and prosperous conversations which spark productivity, collaboration, and innovation. Most importantly, employees feel heard.

Boost Employee Advocacy

Encourage human beings to construct their personal brands on social media by way of sharing the company's idea leadership content, acting on podcasts, and speaking at events. Related: Your Employees Are Your Most Valuable Marketing Asset

When you provide your employees such opportunities, they experience an extra concern with the employer and are geared up to make contributions more to your business success.

Sparking Innovation

Innovation isn't truly a buzzword anymore. Companies that do not innovate in the twenty-first century either go out of enterprise or usually fighting to make profits. But how can you create a lifestyle of innovation in your company? Internal communication can spark innovation in a number of ways, such as:

Knowledge sharing

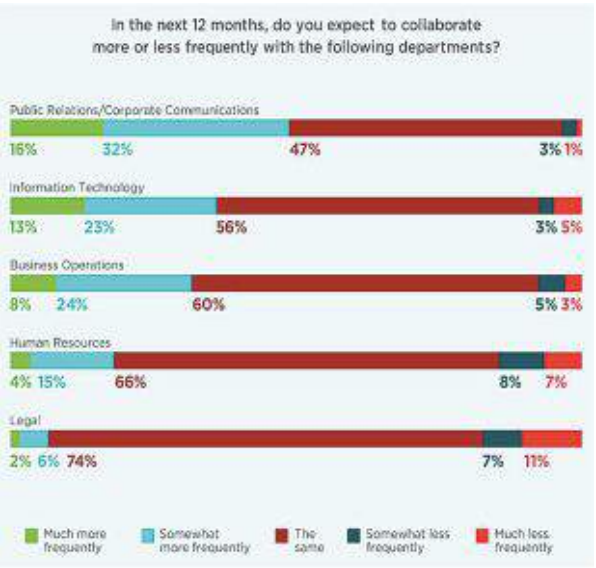
Before employees can innovate, they need to be knowledgeable about what's each internal agency updates and external enterprise dynamics and monetary developments.

Using an employee communications platform such as Smarp permits you to motivate employees to share articles and updates about your industry, rivals, and the economic system with their colleagues. Similarly, they can share inside updates about customer challenges, successes, and so on.

This knowledge will help employees come up with ideas and take initiatives that truly reflect the needs of customers and the market.

Inter-Departmental Collaboration

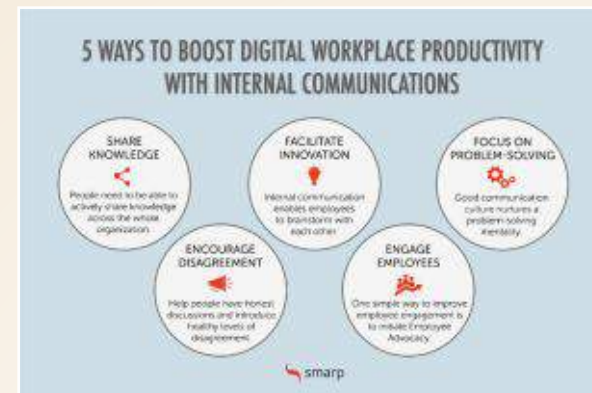
Innovation in no way takes place entirely inside the confines of a lab. Truly profitable thoughts and execution require inputs from throughout departments like tech, support, advertising, and sales.



When employees have the capability to communicate with people throughout departments effortlessly, they will be capable to easily collaborate to talk about and refine innovation initiatives that turn out to be actually profitable.

Improving Employee Productivity

Productivity is all about getting extra finished in much less time. The extra productive your people are, the greater your income generated/employee and the decrease the cost/employee.



Better corporate communication improves employee productiveness in the following ways:

Problem Solving

Many employees waste heaps of time looking for the required records to execute particular tasks. This isn't simply the case with new employees. Anyone who's making an attempt to execute a technique they are unfamiliar with would face this issue.

Conclusion

Corporate communication is no longer limited to your media members of the family team. Today, all your workforce - from your executive management to your support crew members can have an energetic function in it. Corporate communication allows your whole staff to make a unified and large contribution to your commercial enterprise's success.

Sources Link:

<https://www.northeastern.edu/graduate/blog/what-is-corporate-communications/>

<https://www.workvivo.com/blog/corporate-communication/>

FACTS



SOME FACTS ABOUT BEER



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Zythology

The “study of beer”. Yes, it’s a thing. A thing with a cool name. From the Greek words zythos (beer) and logos (study), Zythology is more than just chugging pints of lager, it is the analyzing of ingredients and the effect they have on the brewing process, the knowledge of beer styles and history, and the application of beer pairings. A zythologist is a true beer connoisseur.

The Origin of IPAs

India Pale Ales were first developed when English brewers in the early 19th century were looking for a way to export their traditional ales to India. The adventurous journey by sea would take too long, and the beer would spoil by the time it arrived. Extra hops were added, and the IPA was born. Originally, the IPAs were not much stronger in alcohol than other ales, but the hoppy bitterness caught on, and during the mid-1800s, the IPA was being brewed and sold all over England.

The First Professional Brewers

Were all women. In ancient Peru, breweries were operated by ‘women of the elite’. These ladies had to be of noble birth, or extremely beautiful in order to be allowed to brew the beer.

Very similar to current brewing trends...

Booze Hounds

Data from a 2012 Kirin Beer University Report shows that the thirstiest country in the world, per capita, is... Czech Republic. The Czechs consume an average of 148.6 liters per year each, or about 418 12oz bottles per person. Not a bad session. India is only 2 Liters, whereas China has reached more than 35 Liters per year.

The country that consumes the greatest volume of beer overall, is China. 44,201 KILOliters per year. That’s 44,201,000 liters, or just under 1.5 BILLION bottles of beer.

2014 Ranking	2013 Ranking	Country	2014			2013	
			Total Consumption (thousand kl)	Global Market Share	Growth Rate 2013-2014	Total Consumption (thousand kl)	Global Market Share
1	1	China	44,853	23.7%	-3.1%	46,312	24.6%
2	2	United States	24,172	12.8%	0.5%	24,050	12.8%
3	3	Brazil	13,146	7.0%	5.0%	12,520	6.6%
4	4	Russia	10,012	5.3%	-0.5%	10,062	5.3%
5	5	Germany	8,441	4.5%	0.1%	8,429	4.5%
6	6	Mexico	6,908	3.7%	2.5%	6,739	3.6%
7	7	Japan	5,407	2.9%	-1.5%	5,489	2.9%
8	8	United Kingdom	4,375	2.3%	3.1%	4,244	2.3%
9	9	Poland	3,776	2.0%	1.1%	3,734	2.0%
10	10	Spain	3,729	2.0%	3.4%	3,606	1.9%
11	11	Vietnam	3,640	1.9%	6.4%	3,420	1.8%
12	12	South Africa	3,150	1.7%	0.0%	3,150	1.7%
13	13	Ukraine	2,420	1.3%	-10.7%	2,710	1.4%
14	14	India	2,350	1.2%	6.4%	2,209	1.2%
15	18	South Korea	2,292	1.2%	11.7%	2,052	1.1%
16	15	Venezuela	2,173	1.1%	2.0%	2,130	1.1%
17	16	Colombia	2,155	1.1%	1.9%	2,115	1.1%
18	17	Canada	2,026	1.1%	-2.4%	2,075	1.1%
19	20	France	1,924	1.0%	2.8%	1,871	1.0%
20	19	Czech Republic	1,879	1.0%	-1.6%	1,910	1.0%
21	21	Argentina	1,826	1.0%	-1.0%	1,844	1.0%
22	22	Thailand	1,794	0.9%	-2.4%	1,839	1.0%
23	24	Australia	1,753	0.9%	0.5%	1,745	0.9%
24	23	Romania	1,689	0.9%	-3.5%	1,750	0.9%
25	25	Italy	1,678	0.9%	0.2%	1,675	0.9%

Table 1: Global Beer Consumption by Country in 2015

Ref. https://www.kirinholdings.co.jp/english/news/2015/1224_01.html

Warm(er) Beer is OK!

Those million-dollar beer commercials may suggest otherwise, but ice-cold is not the best way to serve beer. While there is no one rule or temperature to aim for, one thing is certain: the sensation of coldness inhibits the tongue’s taste receptors, and so by over-chilling your beer, you are numbing your palate to any nuances of flavors.

Different beers are served at different temperatures around the world. Lagers and Pilsners will taste great around 40 degrees Fahrenheit (5 degrees Celsius), whereas some Stouts can be served around 55 degrees Fahrenheit (13 degrees Celsius), which is the approximate temperature of a British cellar (and also, most of Britain), and so the temperature at which the kegs would be stored. Other British Ales, high-gravity Barley Wines, and Bocks will really open up if served just slightly chilled, somewhat closer to room temperature than many people are accustomed to.

Beer Storage Tips

Follow these beer storage tips to maximize your beer enjoyment; Store your beers upright.– This reduces likelihood of contamination from the cap. Store your beers below room temperature. – A warm shelf will accelerate the rate at which beer loses freshness. Store your beers in the dark. – Beers become ‘sulfurous’ when they are touched by sunlight. This is why some companies choose to use brown bottles – they block the most light and protect the beer as much as possible. This is also why kegs do not have windows.

Speakeasies

The Speakeasy originally got its name because of the “practice of speaking quietly about such a place in public, or when inside it, so as not to alert the police or neighbors.” The name is considered to have originated from the owner of an unlicensed bar in 1880s Pittsburgh.

The Growth of the Craft Beer Industry

The continued growth of craft beer and craft breweries in 2020 means that there are now more than 3500 breweries operating in the U.S., around 190 in India.

World's Oldest 'Industrial-Scale' Brewery Found in Egypt



The 5000 yrs old brewery "may have been built specifically to supply the royal rituals that were taking place inside the funeral facilities of the kings of Egypt," says lead archaeologist Matthew Adams. (It is found in funerary site in North Abydos, Egyptian Ministry of Tourism and Antiquities).

Growlers

Beginning as early as the late 1800s, tin pails, pitchers, glass jars or jugs, or other vessels were used to carry beer home from the local pub. ... These "growlers" supposedly got their name because as the beer sloshed around, it caused the carbon dioxide to escape and created a growling noise.



Wine- Cider Difference

Difference #1 – The Fruits Used to make it

For wine, we use grapes. And for cider, the traditional fruit used is apples.

Likewise, there are some wines that are made using apples. These tend to be a little sharper than the wines made using grapes, as you'd expect if you've tasted both fruits before.

Difference #2 – The Fermentation Process

The difference comes in the length of time that the fruits spend in the fermentation process. Wines spend a lot longer in this stage, which leads to the resulting drink having a far higher alcohol content than cider.

As a general rule, cider will spend a lot less time in the fermentation stage than wine.

Difference #3 – The Alcohol Content

Cider will generally have an alcohol content that hovers around the 5% mark. Some examples of the beverage may be very closer to the 8% or 9% mark.

At the lower end of the spectrum, you'll find wines in the 11% and 12% range. But it's far more common to find wines in the 13% to 15% range.

Difference #4 – The Variety of Types

With cider, you generally have two types – cider and hard cider.

By contrast, there are several more types of Italian wine, each of which requires different production methods. You have white, red, and Rosé wines as standard. Then you have to consider sparkling and fortified wines.

Difference #5 – The Sugar Content

A cider will contain a lot more natural sugars than a wine and it's a pretty substantial difference.

The sugar content in cider ranges from 6% to 15%. By contrast, a wine's sugar content rarely goes above 2% and when it does, it's considered a much sweeter variety of wine than normal. Cider generally tastes sweeter and less complex than wine due to this high sugar content.

WINE-CIDER THE FINAL WORD

Cider and wine should basically be the same drink and they are both made using fruit that undergoes a fermentation process. But a combination of the types of fruits used and the length of time they ferment for results in two completely different types of drink.

Reference link:

<https://www.bottleneckmgmt.com/blog/beer-facts-10-things-you-didnt-know-about-beer/>



NEW JOINERS



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Diwali Celebration 2020



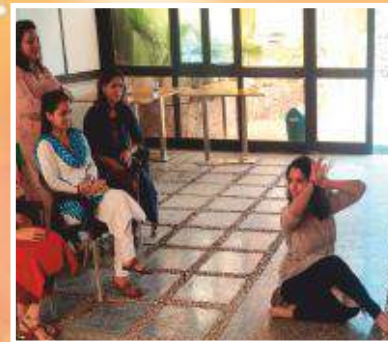
Christmas Party 2020



EMPLOYEE ZONE



Women's Day Celebration



Holi Celebration 2021



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ACHIEVEMENT OF
20 CR.
SALES REVENUE
IN A MONTH



EMPLOYEE ZONE



AGHAAZ 18 - 18th Annual Celebration



EMPLOYEE ZONE



AGHAAZ 18 - Award Distribution



EVENT



Hyderabad Office Launch Pooja- 2020



PURSUIT OF EXCELLENCE

Catalysts values are based on belief of collective growth and respect in our internal and external relationships. This value system has facilitated our endeavour to enter into research and scientific collaborations with highly reputed institutes and organizations. We have a well-defined process for developing and launching innovative products based on the collaborative model.



Catalysts have been certified by ISO 9001:2015 ensuring compliance across multiple criteria including effective Quality Management System, efficient management of our processes and continuous improvement of the system.



It has been established under the Food Safety and Standards Act, 2006 which consolidates various acts & orders that have hitherto handled food related issues. FSSAI has been created for laying down science-based standards for articles of food and to regulate their manufacture, storage, distribution, sale, and import to ensure availability of safe and wholesome food for human consumption.



The FSSC 22000 Food Safety Management System provides a framework for effectively managing organization's food safety responsibilities. It is fully recognized by the Global Food Safety Initiative (GFSI) and is based on existing ISO Standards. It demonstrates that the company has a robust Food Safety Management System in place that meets the requirements of customers and consumers.



Halal Certification Services (HCS) is a world-wide recognized certification providing assessment, auditing, and training services.



Kosher certification is a standalone international quality standard which is increasingly prevalent in the food ingredients and retail sector. Catalysts Biotechnologies Pvt Ltd is certified from KLBD Kosher agency. As Europe's largest kosher agency KLBD is respected and accepted by all parties worldwide. Kosher products require kosher certified ingredients. Ingredient buyers specify kosher knowing that their supplier's manufacturing process has been independently audited.



Research has been the backbone of Catalysts Biotechnologies Pvt. Ltd. since its inception. The research and development division located at 3/1/4, Site IV, Industrial Area, Sahibabad, Ghaziabad is recognized by Department of Scientific and Industrial Research (DSIR), Department of Science & Technology (DST), Ministry of Science & Technology, Govt of India. This recognition has created an enabling environment for development and utilization of new innovations benefit thereof for society and environment.