

WE BREW WITH YOU.™

Discover how quality is the driver for Lallemand Brewing's production processes.



When I was asked to write on the topic of Quality for this latest edition of our "we brew with you" newsletter, I accepted with pleasure since the focus on continuous improvement of 'quality' has been the main driver of our growth at Lallemand. Indeed meeting, or exceeding, the expectations of customers with respect to quality is the essence of any business success.

What may be less obvious is that complaints are important and helpful in the pursuit of continuous quality improvement. Indeed, if one listens to them attentively and seeks systematically to find ways to resolve the issues raised by such complaints one finds that the customer who complains has helped the supplier improve his product or service by highlighting potential gaps between his expectations and the experience. The efforts to correct the identified weaknesses will often succeed and this improves the quality of products and services for all customers (not only for the ones that have helped by complaining who initially raised concerns).

Each time one develops a new product or enters a new market one may not always understand all the conditions of use or the expectations of new customers but thanks to their complaints and compliments we can improve the 'quality' of one's products (sometimes by simply conveying the limitations to the products performance such that the expectations and methods of use can be adjusted).

Lallemand Brewing, offering an increasing variety of strains of yeasts and bacteria in a convenient dry form with the added support of our 'we brew with you' team is well positioned to continuously improve the quality of its products and advice and so help brewers to offer an increasing choice of tasty and interesting beverages.

This focused attention on the quality of our products and advice will be the essential element of our common growth!

Editorial by Jean Chagnon
Senior VP, special advisor and former CEO, Lallemand Inc.

DID YOU KNOW...

Alcohol is toxic to all microorganisms, including yeast?

So why does brewing yeast produce it? Brewing yeast is more tolerant to alcohol. When inoculated into beer wort, brewing yeast quickly produces alcohol to inhibit other microbes so it can enjoy the nutrient-rich feast to itself. But alcohol is still toxic to brewing yeast to some degree and exposure to alcohol will eventually result in stress responses, cell wall deterioration and cell death. Propagation of dry yeast is done under conditions that inhibit alcohol production, which reduces stress on the yeast and results in stronger cells that are exceptionally healthy and ready to ferment!



FEBRUARY 3 – 5 2021
CiderCon 2021
Cider Association
ciderassociation.org/cidercon2021

FEBRUARY 23 – 24 2021
The IBD Virtual Event 36th Biennial Convention
Institute of Brewing & Distilling
ibdconvention2021.vfairs.com

MARCH 23 – 25 2021
Beviale Moscow
beviale-moscow.com

WE BREW WITH YOU™ ONLINE



QUALITY AND SECURITY AT THE SERVICE OF BREWERS AND BREWERIES

Lallemand Inc. takes pride in providing our customers with products of the highest quality standards that guarantee predictable performance. This starts with carefully managed yeast and bacteria cultures from our own culture collection up to our customer-oriented logistics. Strict quality control is implemented at every stage from the slant culture that is used to start a production through the various stages of production to the logistics platform. In addition, Lallemand Brewing has set up a series of brewing specific tests.

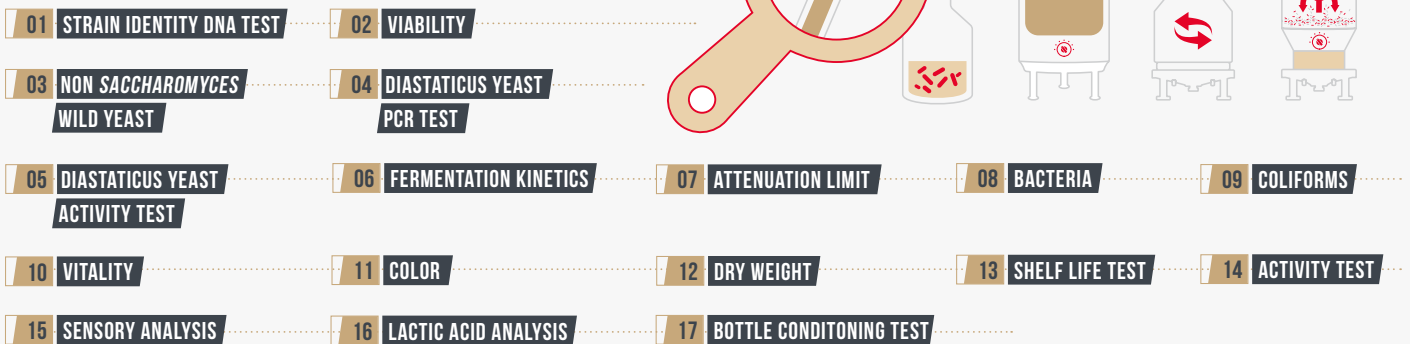
"Our mission is to supply safe products of consistent quality and competitive value, which meet or exceed our customer's needs. We continuously improve our processes, products and services."

Francine Leblanc, VP Quality Insurance, Lallemand Inc.

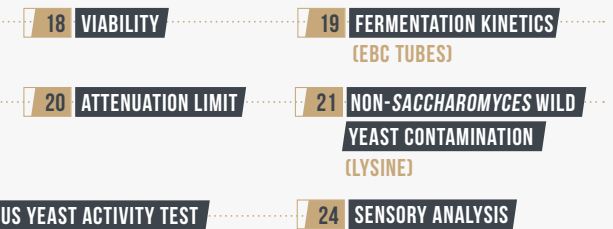
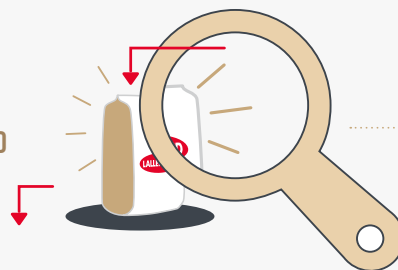
Indeed, one of the advantages of dried yeast is that the stability and long shelf life allows us to perform each of these 24 tests for every batch. Some of these tests will take weeks to produce a conclusive result. For instance, beer fermentations in our standard wort are done with samples of every production to monitor lag phase and overall fermentation time as well as apparent attenuation to ensure the yeast ferments to its specification. After a short storage period the bottled beer is tasted by a trained tasting panel to confirm the aroma meets the flavor profile of the strain and no off-flavors are produced.



24 TESTING STEPS



THE FOLLOWING TESTS ARE REPEATED TO ENSURE QUALITY OF PRODUCT AFTER PACKAGING



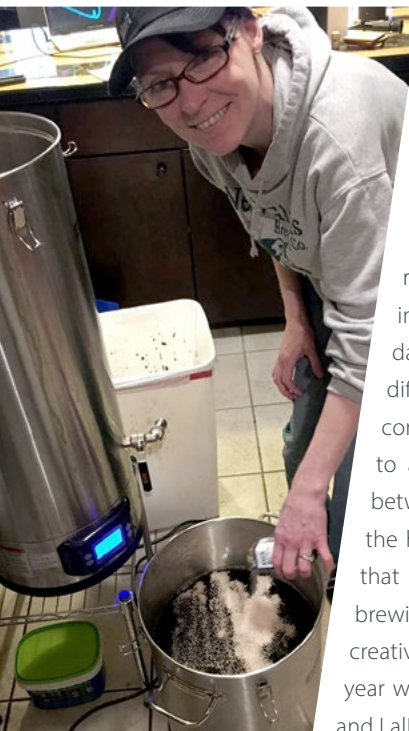
All these tests are done on the bulk yeast after every production and again after the yeast is packaged in its final commercial pack. This ensures our high quality standards are met to give the best brewing experience

For more information about our quality control procedure, download our **Quality and Security brochure**.

DRIVING QUALITY AND INNOVATION IN THE HOMEBREW COMMUNITY

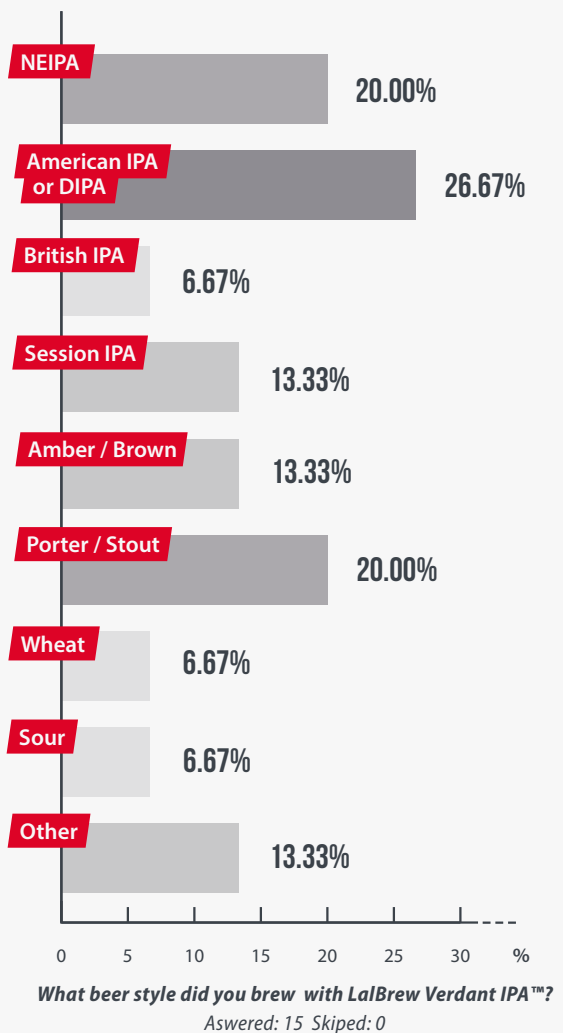
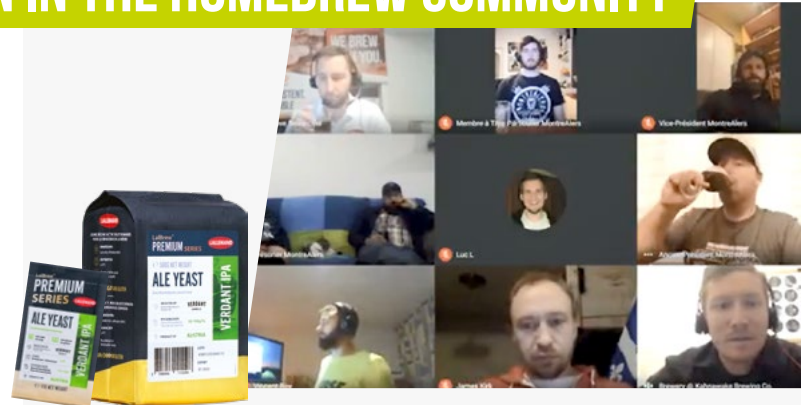
There is nothing more satisfying than that first pint of your freshly made homebrew. No matter if you've been brewing for decades or if you've just caught the bug, the thoughtfulness and care you put into each batch is of utmost importance. You share your creations with friends at celebrations and reveal the play-by-play of what inspired the style, to the painstaking efforts you took to make it. Pro-brewers do this every day in their work; consistency, quality, and innovation are the hallmarks of their success.

At Lallemand Brewing, we firmly believe that homebrewers deserve the same high-quality product as our pro-brewers. To ensure the highest quality product, we package our 11g homebrew sachets under vacuum just as we do for our 500g commercial bricks. Storing the dry yeast under vacuum ensures no contact with oxygen or moisture, which would decrease viability over time. While nitrogen flushed packages perform the same function, in principle, small leaks in the package are impossible to detect and can allow moisture and oxygen to degrade the contents. With a vacuum-sealed pack, any leaks result in a loss of vacuum or visible 'soft-pack,' and we recommend that it not be used.



Just as homebrewers deserve the same quality yeast as commercial brewers, we also believe that WE HAVE A LOT TO LEARN FROM THEM. Typically, we ask commercial brewers to participate in trials at their brewery for each new strain that we release. Doing so allows us to collect important fermentation performance data from various recipes and use different equipment. Historically, commercial brewers have been the first to access new strains, with a lag time between when the strain was available in the homebrew sized sachet. Recognizing that homebrewers also have tremendous brewing expertise as well as profound creativity, we took a different approach this year with the release of LalBrew Philly Sour and LalBrew Verdant IPA.

For each strain, we not only provided yeast to commercial breweries but included local homebrewing clubs for organized trials of these new strains. The MontreAlers, a club based out of Montreal, and Kahnawake Brewing Company worked with the Verdant IPA strain (see the survey, below). The VanBrewers in British Columbia paired up with Parallel 49 Brewing Company for a Philly Sour trial. We followed up with an online discussion where homebrewers and commercial brewers shared their experience with these strains.



Homebrewers brought a lot of value to this discussion as they are better able to brew many different beer styles to showcase each strain's versatility. Discussions were highly informative and lively. Both the pro-brewers and homebrewers came away with a better understanding of these strains' real-life applications, all while sharing a pint of homebrew, of course!

BREWERIES IN-HOUSE MICROBIAL ANALYSIS



A small investment in conducting in-house microbial analysis is one of the most accessible and effective things you can do as a brewery to maintain product quality and consistency. For as little as a few hundred dollars you can set up an inexpensive and reliable microbiology lab for monitoring product quality and stability.



Prepare a universal growth media by adding agar powder to your own low-gravity wort. Differential media such as LMDA, LCSM, HLP, etc. are available for purchase through www.dohler.com. You can also select for yeast or bacteria by adding antifungals or antibiotics to your media, respectively. Most media should be sterilized at 121°C for 15-30 minutes under 15 psi using an electric pressure cooker, stericlave, or autoclave. Prepared sterile media and plates can also be purchased through your collaborators at the QA/QC Beverage Analytics Lab.

Aseptic techniques and a clean environment for pouring plates and culturing are essential. Wear gloves and clean your environment with 70% ethanol. A portable Bunsen burner with a liquid propane tank will provide you with a confined sterile working environment. Standard procedure is to concentrate your sample via centrifugation or vacuum filtration for increased

sensitivity, and to use both negative and positive controls to confirm both proper media preparation and aseptic technique.

Inoculate your plates with ~100ul of sample or control and place them on your benchtop or in an incubator set to 25-30°. A small anaerobic environment requires an airtight container and some inert sachets. Keep in mind growth at room temperature or under anaerobic conditions may require a few more days. If you get results that have you scratching your head, you can always send samples out to the QA/QC Beverage Analytics Lab for full taxonomic identification or microscopic analysis.

Beer is delicious. Unfortunately, there's a lot of spoilage microbes that think so too. It's probably not a bad idea to assume your beer is contaminated until proven otherwise. A small investment in a micro lab will pay dividends and your customers will appreciate the clean and consistent beer. We are here to help; and hope to hear from you soon.

FOR MORE INFO: kstrain3@msudenver.edu

Katie Strain, M.S., Beverage Analysis Lab Manager



Product Update

THE EXCITING JOURNEY OF WORKING WITH BREWERIES TO LAUNCH AN ENZYMATIC SOLUTION



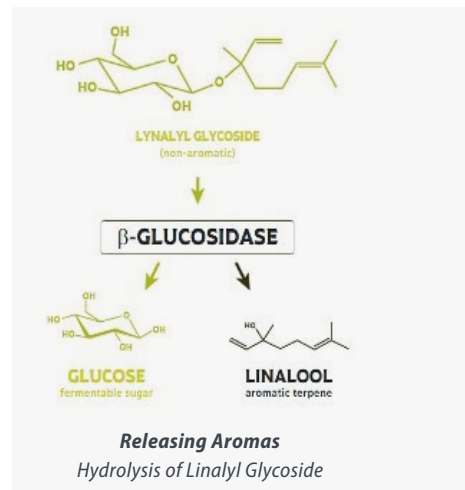
With an increasing demand for hop aroma in beer than ever before, Lallemand Brewing is delighted to announce the release of **ABV AROMAZYME**, an enzymatic solution resulting from an exciting project that has involved different breweries at global scale.

One of the very first breweries involved in the project was Naparbier, a craft brewery located in small town of Navarra called Noain (Spain). Towards the end of 2018, we visited Naparbier with some samples and use it in a Brut IPA, when this beer style was still a trend. During the study design, we split freshly produced wort into two different fermenters, one with ABV AROMAZYME and the other one without (control batch). Once the beer was ready for packaging, we received the following feedback from Juan Rodriguez, masterbrewer at Naparbier: **Treated batch is "cleaner" whereas the control batch is still "green"**.

After that, we asked them for packaged samples which were sent to Mascoma, a Lallemand-owned lab located in United States. There, we conducted terpene analysis as well as sensory. The results concluded that there was a clear increase of monoterpene alcohols, as a result of the hydrolysis reaction of hop glycosides, and a clear preference with the beer treated with the enzyme in a blind tasting.



After this and other several trials worldwide, we are now pleased to offer you **ABV AROMAZYME**, a food-grade enzyme preparation composed of β -glucosidase enzymes that are capable of hydrolyzing the glycosidic bonds, liberating monoterpene alcohol compounds and glucose. Derived from a selected strain of *Aspergillus niger*, this product has been developed to increase the complexity of the hop aroma and flavor profile in beer.



The application of **ABV AROMAZYME** during the start of mid-fermentation provides brewers with the opportunity to improve their hop utilization by releasing additional volatile aroma compounds, thereby decreasing overall hop quantities or using less sophisticated hop varieties.

FOR MORE INFO: <https://www.lallemandbrewing.com/aromazyme/>

