



SELECTED COFFEE YEASTS

# LALCAFÉ™

NEWSLETTER N°2, FEBRUARY 2022

## Lalcafé™, an active dry yeast

If you have already used Lalcafé™ yeast, you might have noticed that they come under dried vermicelli form. You need to rehydrate them to activate them. You also might have noticed that they have a long shelf-life (from 2 to 4 years)! From their day of production, they can be kept for several years and still be as active as the day they were made. We selected this way of production for many reasons, you can encounter yeast under different form which is directly linked to their production and conservation (stability) : cream or liquid yeast is usually used for baking. Indeed, they are produced, distributed and used within a very short time frame. The liquid form is very sensitive to contamination : in liquid form they are kept in a nutritive broth so they can survive a few days. The drawback is that all the other species around can easily aggregate and contaminate the medium, also, if the medium is depleted in nutrition, the yeast starts to die.

Stability, convenience, no propagation needed, purity, flexibility for innovation.



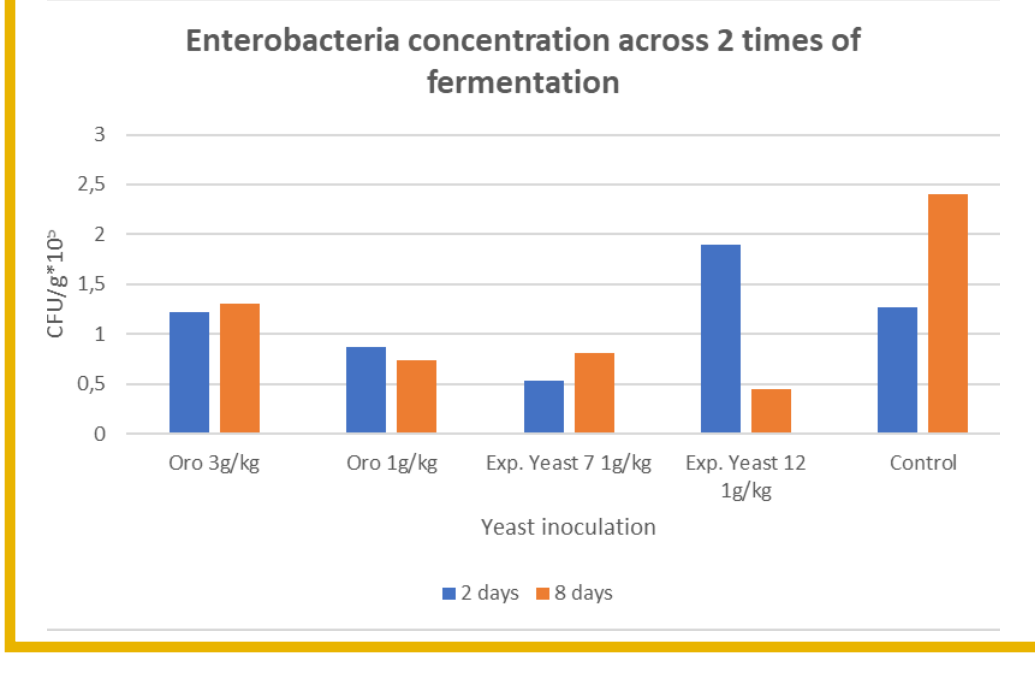
## Bioprotection role of the yeast

Over the course of Lalcafé™ experimentation, we have assessed several benefits from yeast inoculation in post-harvest coffee processing. Amongst many, the biocontrol role is one of precious help to control the microorganisms that act on coffee fermentation.

We explored mostly on natural process where the contamination is more likely since directly in contact with the environment.

### The limitation of undesired microorganisms

A first field trial performed in Vietnam showed us the reduction in enterobacteria population on an inoculated sample vs a non-controlled sample. The fermentation duration was for 8 days in bag on whole fruit :



As we can see, most inoculated conditions show less enterobacteria than the control. Enterobacteria is usually not desired in coffee fermentation, they are known to come from human manipulation and are likely to develop funky flavours. Also, we can observe that dosages at 1g/kg of coffee fruit is equally efficient as the 3g/kg of coffee. That is why we recommend our inoculation dosage as 1g/kg of coffee. The effect is strain-dependent, Lalcafé™ Oro is efficient from the beginning.

To confirm this role of biocontrol, we performed a lab experiment on real coffee fruits. We imported frozen fruits from Nicaragua (Arabica Marsellesa), thawed them and did several trials based on different parameters : duration of fermentation, temperature of fermentation, temperature of drying. For the below picture, we did ferment some cherries after inoculation with Lalcafé™ Oro. After 72h, we macerated some cherries in peptoned water and then plated at different dilution levels on a yeast screening medium (Sabouraud).



Petri dish after plating of Lalcafé™ Oro inoculated coffee.



Petri dish after plating of uncontrolled coffee.

The dish resulting from the non-inoculated coffee has developed contamination from molds that are undesired in the coffee mass during fermentation. This type of mold usually produces earthy and dusty flavour compounds.

To make sure your coffee will be free of all sorts of molds or undesired microbes during post-harvest processing, using Lalcafé™ yeasts will help on top of good practices. If you want to try and test our Lalcafé™ yeast on your own coffee, reach out to our product manager Margaret Fundira (mfundira@lallemand.com)

## Lalcafé is interviewing Lalcafé yeasts user.



**Paul Arnephy is head roaster of the French wholesale coffee roasting and coffee skills training business, Lomi. He also won the title of "Meilleur ouvrier de France" (best craftsman of France) in 2018 in roasting as well as a Q-grader arabica and SCA trainer. Paul and his team propose high quality coffee, equipment and support to their clients, including on-going training. They also provide certified courses through various educational streams: Q-grading, SCA certifications and barista courses.**

Paul started experimenting with Lalcafé™ yeast jointly with Dattera for the last two years.

"We have used Lalcafé™ CIMA yeast for the last two years with an incredible farm in Brazil called Dattera. For the last 7 years we have been buying Dattera's beautiful coffees as well as collaborating with them on some processing ideas. We have used the yeast to achieve two different goals each time. Firstly, to use as a means of producing a marketable quantity of delicious coffee; and secondly as a control function to try different processing techniques.

The first year, 2019, we focused on using Lalcafé™ CIMA simply to see what results it would give in the cup relative to two other processing methods being done (that we had done many times before) from coffee on the same parcel. These were a classic fresh fruit natural process and the Methode Beaujolais. The results were really interesting, the Lalcafé™ CIMA seemed to give us a really just representation of the yellow bourbon chocolate that Dattera grows. Very clean, distinct sweet milk chocolate flavour and a lovely delicate citrus fruit flavour.

The second year, 2020, using Lalcafé™ CIMA we again used it to produce a lot of marketable coffee. No surprises, it tasted exactly like the 2019 production! We also used Lalcafé™ CIMA as a control for some agricultural techniques that we tried known as fruit removing or "vendange vert". Here, the coffee "cherries" were removed at the very early stages of development at a clearing rate of 30%. The idea being that the remaining seeds would have less competition for nutrients and the tree would be less exhausted. The results were incredible."

### Lalcafé™: How did you hear of Lalcafé™ Yeast for the first time?

**Paul :** Lalcafé™ came up during some research looking for yeasts, saccharomyces or non-saccharomyces, for coffee processing. Lalcafé™ was vaguely on my radar having come across it when talking with beer brewers in the past. I found it really interesting that Lalcafé™ focused research and product development on coffee processing specific yeasts. Up until that point a lot of the yeasts being used to inoculate coffee for fermentation were being taken from other industries and were designed for specific outcomes.

### What made you want to try and perform some field trials with some Lalcafé™ yeasts?

I was intrigued by the potential in creating consistent and delicious cup profiles. As a wholesale roaster it is important, we can deliver every year quality and consistency to our clients. Equally attractive was the idea of the yeasts, because of their consistency, as control processing when trying some different fermentation, drying of agricultural tests.

### How do find working with and roasting Lalcafé™ inoculated coffees?

In terms of the coffee processing, it was super easy. The protocol that has been developed by Lalcafé™ is very easy to implement.

### Are there any specific tips you could give on how to roast inoculated coffees?

I can't really give any advice specific to inoculated coffees that would be relevant across the board. The cultivar, screen size, moisture content and aesthetic goal of the roaster is still the most important element. The Yellow Bourbon from Dattera that were processed with Lalcafé™ CIMA did tend to transfer the energy throughout the seed at a faster/more efficient rate. Also the bean surface darkens at a faster rate than wild fermented coffees. So with the Lalcafé™ CIMA inoculated coffees we needed to be careful to not roast with a very high drum or environmental temperature. The beginning of the roast we use the coffee as a heat sink, trying to suck as energy out of the drum using very low heat input for the first 45 seconds. This also helps us to control the browning towards the end of the roasting process. Giving us the possibility to delicately apply the energy without excessive heat input from the drum.

### Where do you place the inoculated coffees within the rest of your portfolio? How do you market them?

We sell them as part of our "Ephemere" range of coffees. These are really high quality coffees that have a specific element in terms of flavour, cultivar, provenance or processing that set them apart.



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