

Coffees inoculated with specific selected coffee yeast present a better freshness and quality during storage



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LALCAFÉ™ has been investigating for the last 8 years to demonstrate the positive effect of selected yeasts for coffee fermentation

INTRODUCTION

Selected yeasts for coffee fermentation have been more and more brought forward for their different positive properties: high pectinolytic activities to degrade coffee mucilage¹, improving the final quality in the cup². On another note, it is also known that green coffee quality degrades during storage, losing in SCA score but also in aromatic compounds³. However, it has been noticed from many producers using LALCAFÉ™ yeasts selected for coffee processing, that the green coffees resulting from inoculated fermentation showed a stable quality and even improved over time.

MATERIAL/METHODS

The samples have been processed over different fermentation trials in different origins (India and Brazil). The coffees were inoculated with different strains:

Yeast	LALCAFÉ BRIOSA™	LALCAFÉ™ Yeast 2	LALCAFÉ™ Yeast 3	LALCAFÉ™ LDP
Code	Y1	Y2	Y3	Y4

And were assessed by an internally trained sensory panel. Each time from 10 to 13 panelists evaluated the coffees and ranked them on 2 attributes: preference and aromatic intensity (Figure 1). We repeated this exercise over time to assess the evolution during green coffee storage. (storage in plastic bags at 20°C). After collecting data, we ran a Wilcoxon test (Table 1). For Brazil, a cupping was performed every 3 months for a year of storage with 6 cuppers (2 rep per sample) each time the control vs the inoculated coffee (Figure 2).

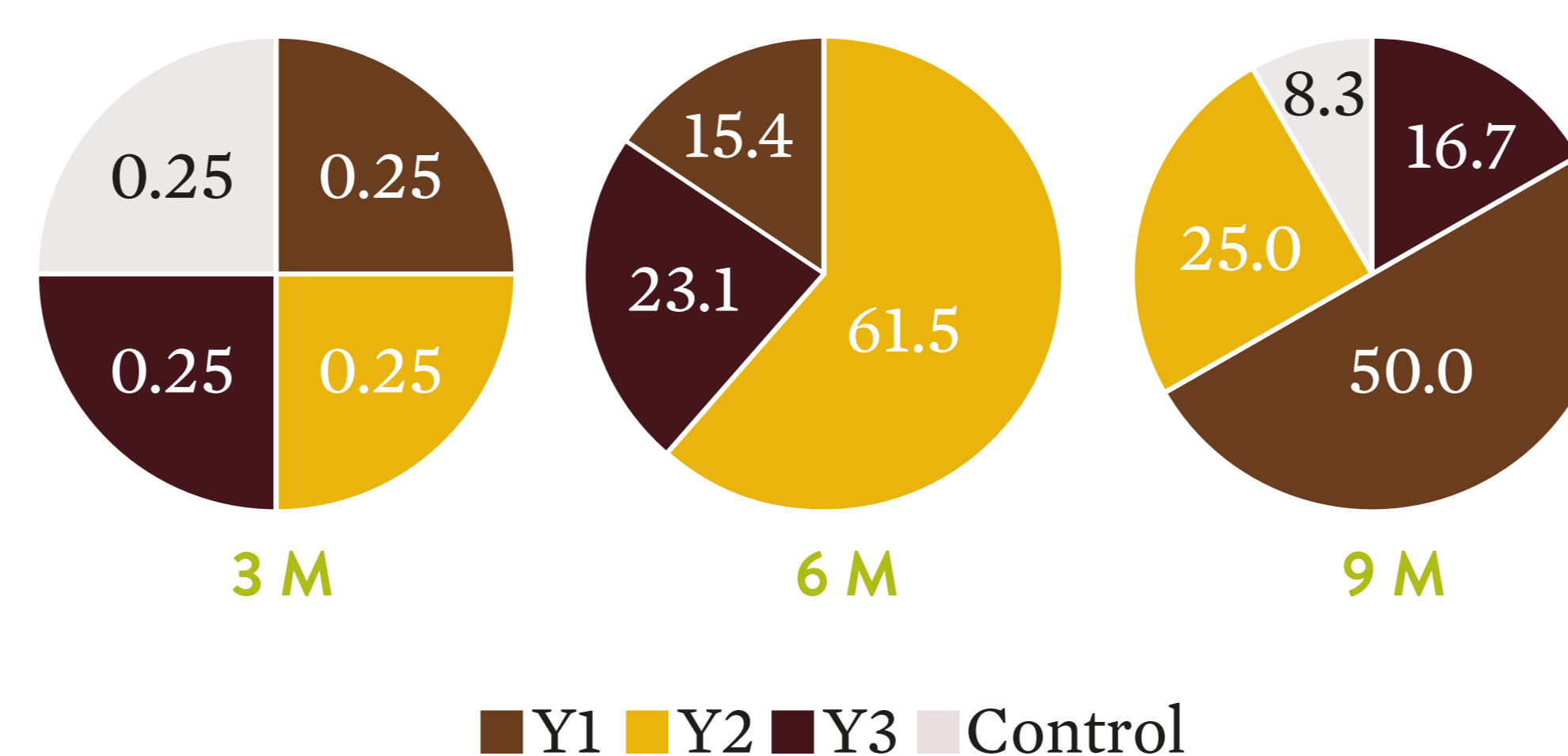


Figure 1: Results (%) of top 1 aromatic intensity – 3, 6 and 9 months on Indian samples

Aromatic intensity ranking				
Yeast	3 months	6 months	9 months	
Y1	A	A	A	+
Y2	A	A	A	
Y3	A	A	A	
Control	A	B	B	

Table 1: Indian samples - Ranking results on aromatic intensity for 3 storage times (HSD Tukey @5%)

RESULTS/DISCUSSION

The **aromatic intensity and SCA ranking** scores of the LALCAFÉ™ yeast inoculated coffees were observed overtime and an **improvement** of these attributes was observed compared to non-inoculated fermented coffees. On the Indian coffees under observation, the control consistently gets ranked as the one having the least aroma intensity (Figure 1). It appears that Y2 and Y1 were ranked significantly **higher than the control for its aromaticity** (6- and 9-months storage) (Table 1).

And on the Brazilian coffees, we see a clear **score increase** by more than 2% for **the Y4 inoculated coffee** over a year of storage whereas the control's score decreases gradually up to 12 months (Figure 2). These results apply to both washed and natural processing protocols. We used Natural processed coffee in India, but we have also observed such results on washed coffees.

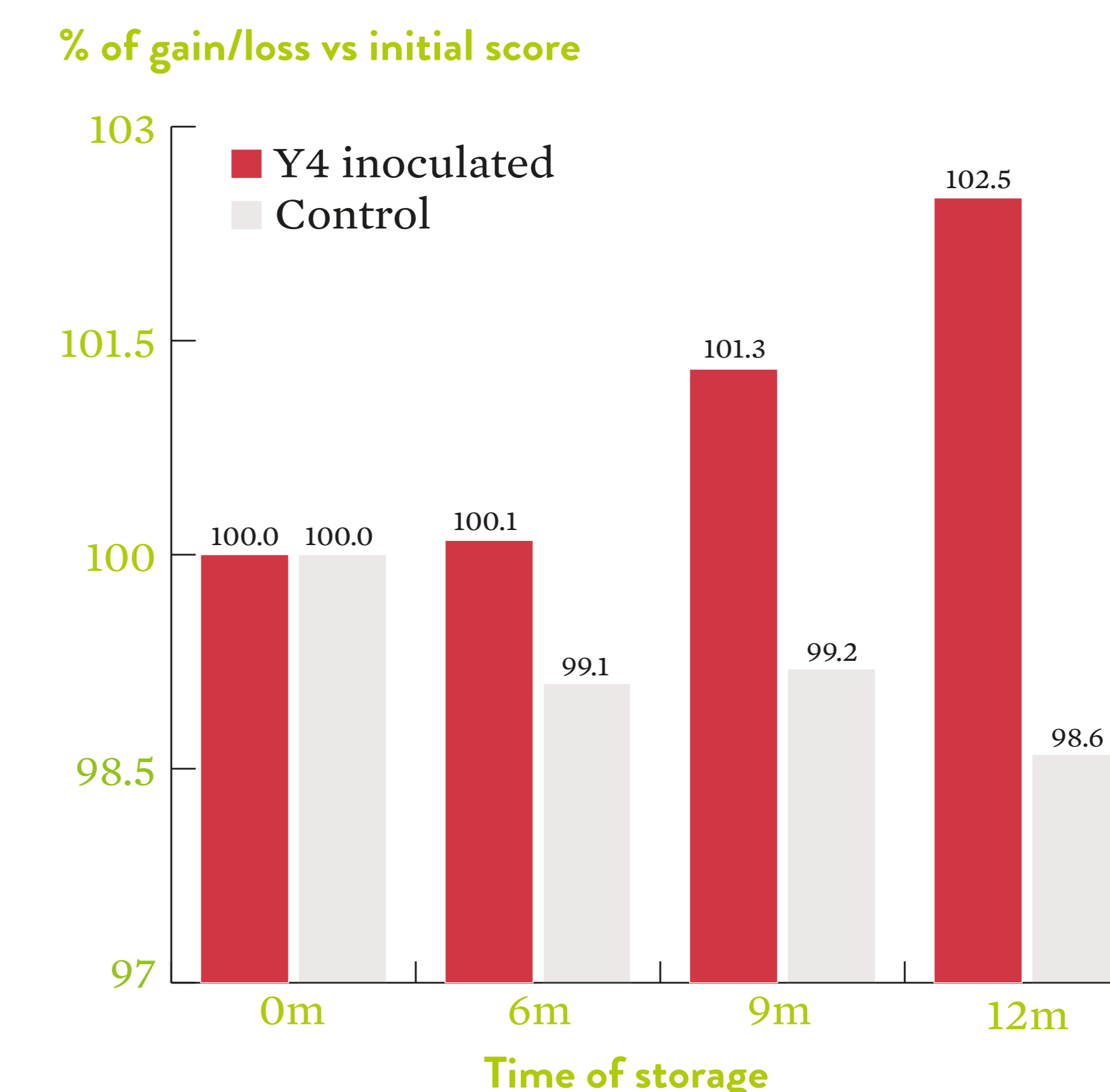


Figure 2: Brazilian coffees - Evolution of cupping scores over time (% of gain or loss)

CONCLUSION/PERSPECTIVES

As the loss in quality is devaluing the coffee and its selling point, inoculation is a tool for producers to keep their coffee longer. Here we highlight the specificity of Y1 as being consistently improving the shelf life up to 1 year of storage. To validate our sensory findings, we are aiming at identifying aromatic markers. We are currently running such tests on more coffee lots from different origins and processes. This will explain why a coffee is losing on quality over storage and how the yeast is actually balancing it.

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