

LALCocoa Forte™

by LALLEMAND

Fermentation control

The cocoa fermentation is an essential process in the production of commercial beans for the manufacture of chocolate. It is an entirely biological process (microbial activity), which can be difficult to achieve properly due to the various current practices. The absence of fermentation control largely explains the inconsistent quality of commercial cocoa beans. After harvesting and opening the pods, the cocoa beans and pulp are kept in boxes or are heaped and fermented for maximum 8 days.

Due to a complex microflora, successive fermentations occur: fermentation due to the yeast activity, acetic and lactic fermentations due to the bacterial activity. During this process, the beans have to be mixed and turned by moving them from a box or heap to another.

This will allow the aeration of the matter and a better effectiveness of the fermentation.

This complex fermentation process is crucial because partially fermented cocoa beans are not as valuable as completely fermented beans. The control of these fermentation steps will secure and ensure an optimal quality of the cocoa beans.

Our studies on cocoa production showed that controlling the fermentation process by adding a specific yeast at the beginning of fermentation, improved the quality of cocoa beans.

LALCOCOA FORTE™ yeast has been selected within the *Saccharomyces cerevisiae* species in collaboration with research and technical institutes.

LALCOCOA FORTE™ has a strong capacity to unlock the cacao aroma with the security to complete the fermentation.

LALCOCOA FORTE™ is the result of 4 years of research and many trials on cocoa in different mills and farms around the world. The results confirm that LALCOCOA FORTE™ is truly suited to manage cocoa fermentation. Its own properties match with the conditions of cocoa fermentation (high temperature, variation of pH...) and allow revealing the quality of cocoa beans.

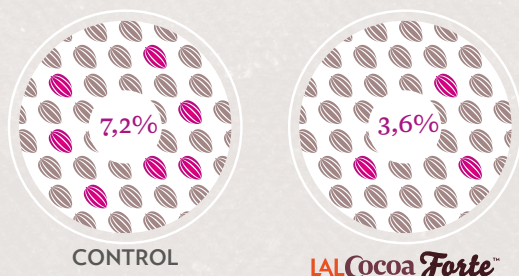
Benefits of LALCOCOA FORTE™ yeast

Reliable fermenter

When properly used, LALCOCOA FORTE™, due to its specific metabolism, speeds up increase in temperature in the cocoa mass and favors a good acetic fermentation. This facilitates a more regular and complete fermentation process compared to a classical process with native microflora.

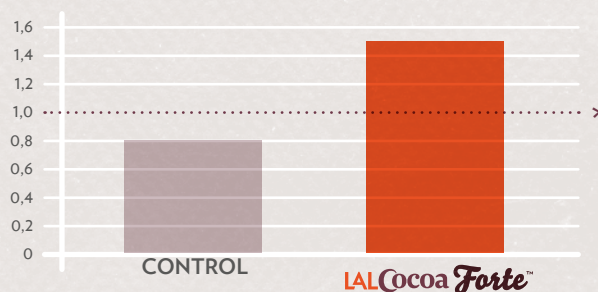
Impact of LALCOCOA FORTE™ on purple beans after fermentation

Percentage of purple beans in total of 100



This study (done in the French Guiana), confirms the benefits of using LALCOCOA FORTE™ observed through reduction of purple beans. After fermentation with LALCOCOA FORTE™, 100 beans were picked, cut in half and the purple beans counted. The results were compared to beans fermented without yeast inoculation.

Impact of LALCOCOA FORTE™ on the quality of fermentation



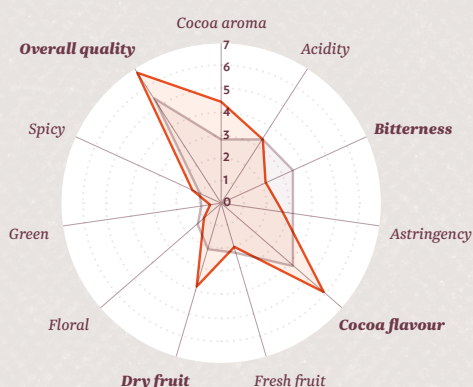
These results confirm the positive impact of LALCOCOA FORTE™ on the fermentation index. LALCOCOA FORTE™ is a strong tool to manage fermentation and consequently reduce defects on raw cocoa.

(*) The fermentation index (ratio of fermented beans to non-fermented beans) gives us a complete vision of the quality of the cocoa fermentation. If the ratio is greater than 1, it means that fermentation is complete.

Sensory impact

LALCOCOA FORTE™ contributes to the sensory complexity and the quality of cocoa. Its ability to secure and complete the alcoholic fermentation makes it a good tool against the risk of growth of spoilage micro-organisms which can generate undesirable defects (animal notes, earthy...). Beside its good fermentation capacity in cocoa conditions, LALCOCOA FORTE™ is recognized to reinforce the sensory quality of the beans, expected by the manufacturers: less bitterness, more cocoa aroma and dry fruit notes.

Sensory profile (Professional panel)



CONTROL

LALCocoa Forte™

300 kg of CCN-51.
5-day fermentation.
Turning every two days.
Drying under full sun

Trial June 2016, Peru, Tingo Maria

Recommended dosage & instructions for use

Before its addition in the cocoa beans, LALCOCOA FORTE™ must be rehydrated in 10 times its weight of clean water between 15 and 37°C (free of chemicals, or organic matters like soap, fats, smell) during 20-30 minutes.

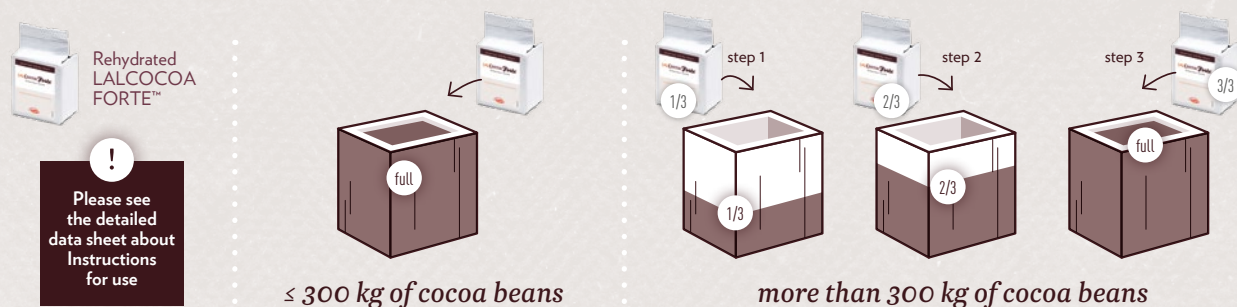
2 g of dry LALCOCOA FORTE™ per 1 kg of cocoa beans

After 20-30 minutes of rehydration, add the suspension to the tank of cocoa beans to be fermented during filling in order to ensure the best dispersion of the yeast. Depending on the quantity of beans in the tank, the yeast suspension must be added gradually during the filling of tank to guaranty its good homogeneity.

Recommendations

After LALCOCOA FORTE™ inoculation:

- Fermentation duration follows the good practice protocol already enforced onsite (with a maximum of 8 days depending on the quantity of mucilage) to achieve a complete fermentation with a good impact on sensory evaluation
- Batches must be aerated by turning cocoa according to the protocol in place, to favor a good microbiota succession



Packaging and storage conditions



- Available in 500 g pack.
- To be used once opened.
- Only use vacuum-sealed sachet.

Store in the original packaging, in a cool and dry place (<25°C). 3 year shelf-life.

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