

# CDRCoffeeLab

**CDR CoffeeLab** the system for analyzing **coffee from fruit to cup**



## Analyses

**Organic acid:** Lactic acid, Malic acid, Acetic acid, Citric acid, Total Acidity

**Sugars:** Glucose, Fructose, Sucrose

**Alcohol**



**Fruit Pulp, Mucilage  
Fermentation Liquid**



**Green  
Beans**



**Roasted Coffee,  
Espresso**

## Control of the Fermentation Process

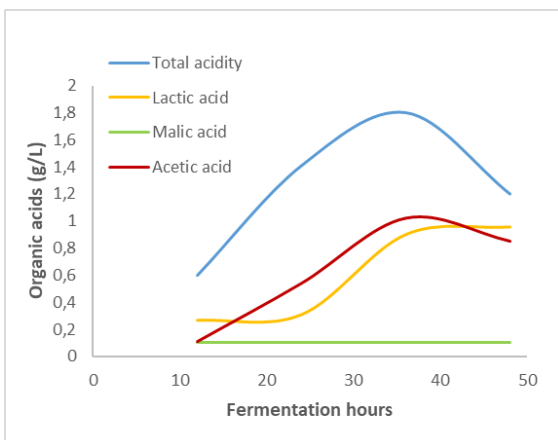
It is possible to follow the fermentation process through the definition of objective parameters performing analyses during all stages **from fruit to dried green coffee**.

Fermentation is a metabolic process that uses sugar and it is critical for removing mucilage from parchment coffee. The fermentation process is facilitated by enzymes that naturally occur in the coffee fruit and in the environment. The microorganisms play an important role in degrading mucilage by producing various enzymes, alcohols, and acids during the fermentation process. The acids are transfer to the green beans improving flavors and aroma of the coffee.

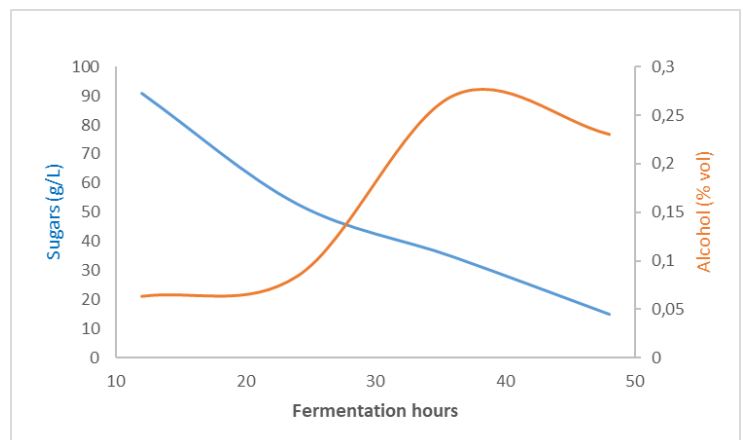
The fermentation process therefore has an important impact on final quality in the cup.

### Analysis of water in Coffee Wet Fermentation

Tests carried out in collaboration with IHCAFE in November 2022



Total acidity and acetic acid increase up to 36h and then decrease. Lactic acid develops between 24 and 36 hours of fermentation. Lactic acid is initially formed through malolactic fermentation which consumes the malic acid.



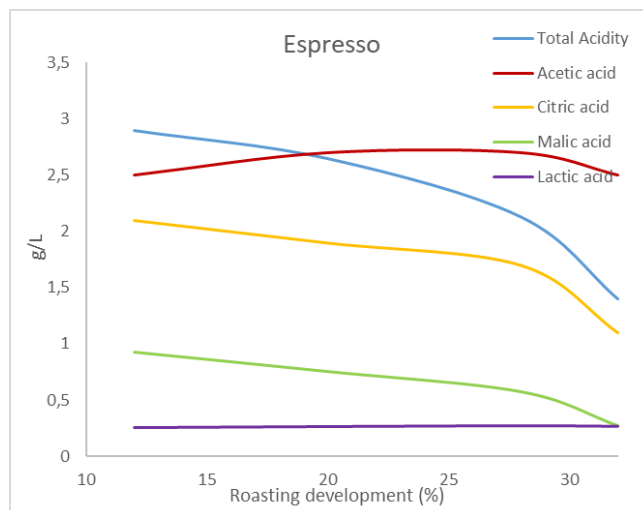
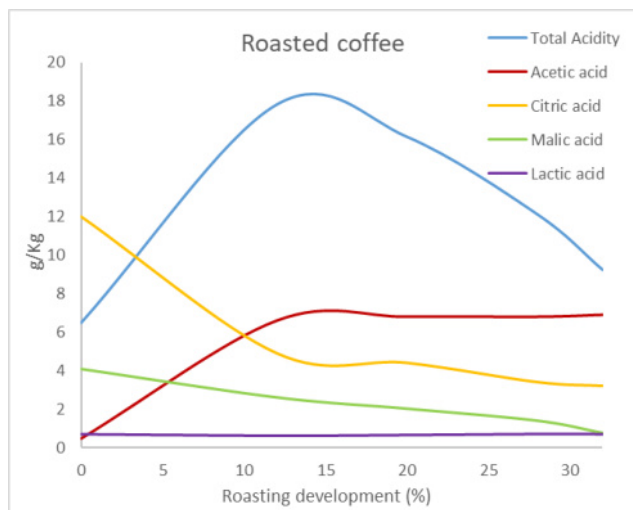
The fermentable sugars consumed by the microorganisms decrease significantly over time by continuing to increase acidity and then produce alcohol. That alcoholic fermentation takes place between 24 and 36 hours.

# Analysis on green & roasted coffee

For a control of the different roasting levels

The CDR CoffeeLab system allows you to define a chemical profile of coffee through the quantification of parameters, such as organic acids and sugars. It is then possible to combine sensory analyzes with chemical ones, with the creation of a panel of objective information that joins the more subjective human ones.

## Analysis on green beans and roasted with 4 different degrees of roasting



In espresso the organic acids are from 70% to 90% of those present in roasted coffee.

With a higher degree of roasting, some parameters decrease while others remain stable, resulting in a different sensory result. The trend in total acidity, which decreases as the degree of roasting increases, is also perceived on tasting. Citric and malic acids are also perceived on tasting, which are higher on lightly roasted coffee. They decrease, however, with darker roast and are not perceived on tasting.

The study on the fermentations and the relative tests are carried out in Honduras in collaboration with the Instituto Hondureño del Café (IHCAFE). The tests on roasted coffee and espresso were carried out with the Accademia del Caffè Espresso.



Learn more about CDR CoffeeLab at [www.cdrcoffee.com](http://www.cdrcoffee.com) and leave your comments and questions. Your suggestions will be greatly appreciated.

CDR CoffeeLab is a project designed and developed by CDR Srl in collaboration with Accademia del Caffè Espresso - La Marzocco and it's part of the CDR FoodLab® range of products by CDR Srl- Italy.



## CDRCoffeeLab

CDR CoffeeLab, is a system of **FOODLAB** Line, developed by CDR Srl. Tel. +39.055.871431 • Fax +39.055.8714322  
Via degli Artigiani, 6 • 50055 Ginestra F.na • Florence - Italy • [info@cdrcoffee.com](mailto:info@cdrcoffee.com) - [www.cdrcoffee.com](http://www.cdrcoffee.com)

