

COFFEE STORAGE CONSIDERATIONS

OPTIMIZE FLAVOR AND DECREASE FRAGRANCE LOSS

by Mauro Cipolla

The coffee buyer has "cupped" hundreds of coffees to choose the **final** ingredients in your favorite coffee blend. The warehouse staff at the **roasting** plant has worked hard to ensure proper storage of the green coffees. The master roaster has used all of his or her senses to roast each chosen varietal to its specific and unique roasting point. The master blender formalizes the blend, and the resulting "recipe" is "mixed" to be properly packaged. Finally, you receive your fresh roasted coffee and espresso blends to be enjoyed by your customers.

It is at this point in time that the fate of your customer's favorite coffee is shaped by your actions.

Chemical alterations can have direct and measurable effects on the volatile aromatic oils of coffees, which are easily destroyed through improper storage.

The "enemies" of coffee are basically water or moisture, oxygen, odors, light, and temperature. Let's take each one of these, analyze what dangers they represent and how we may protect our coffees from their attacks.

- Roasted coffees have a water content of one to two percent on the average. If moisture levels are not properly kept below four percent, stale smell and flavors will develop. The coffee will "age" much more quickly than normal, resulting in a very short shelf life, and a very bad-tasting coffee. High moisture levels can also produce irregular extraction and brewing results, due to coffee particles "stick" together. In extreme cases, when relative humidity percentages exceed 60 percent, we find the possibility of exponential growth in the water content within the coffee beans. This can easily introduce microbiological spoilage activity and mold. It is thus extremely important not to store coffees in the freezer of the refrigerator.

- Oxidation will create loss of aroma, staleness, loss of flavor, and in the long run, rancidity, due to air and oil contact. Fresh-roasted coffees have a "natural" barrier to oxidation in the form of carbon dioxide. Carbon dioxide is a byproduct of the decomposition of **all** organic matter, and as such it is also found in fresh roasted coffees as a natural gas. This gas is heavier than air, and while inside the coffee bean, it pushed atmospheric oxygen back through greater positive pressure than the incoming air.

Having a life cycle of its own, carbon dioxide will reach its peak, and will then start a negative pressure process. It is during this stage that carbon dioxide brings into the bean many other atmospheric gases that can harm the flavors of **all** coffee.

It is therefore imperative to store coffees in airtight packaging after opening the original package.

Tin and aluminum containers with gaskets meet the airtight parameters, but their **metallurgic** qualities will negatively affect coffees by increasing oxidation. Glass containers **with** gaskets are proper for our oxidation concerns, but will harm coffees by allowing light penetration. The best solution is oven-baked, **high** gloss,

sealed ceramic containers, complete with gaskets and tie-down clamps. These will slow oxidation and not let light rays through.

- the porous structure of the cell **walls** of coffee beans, combined with the decomposition of carbon dioxide, and the "absorbing" qualities of fatty substances found in the coffee oils, present a great opportunity for foreign odors to penetrate and saturate the interior **linings** of the coffee beans.

This **exterior** 'contamination' will alter aromas and flavors greatly. The best solution is to pay particular attention to what is placed near the coffee beans while brewing, and to store them according to the procedures earlier described.

- Light rays will trigger oxidation reactions; once again the best solution is to follow the **storage** procedures given earlier.

- temperatures above 90 degrees Fahrenheit will harm any coffee. Extremely hot temperatures will further damage the coffees by degradation of carbohydrates, oils and sugars of the coffee beans.

The pores of the beans will be forced open, hydraulic pressure within the bean will increase, and oil migration will occur very fast.

Rancidity and early aging will be the predominant causes of poor-tasting coffees.

The best solution is to properly plan and manage your storage environment to be in the 50 - to 65-degree Fahrenheit range. Constant temperatures are best, since varying temperatures are likely to trigger different degradation reactions at different times that will compound the original problem.

In conclusion, make consistent, proper storage of your coffees a priority, and remember that no matter what form of packaging the coffee is shipped to you in, (or properly controlled by you upon receipt), all coffees should be consumed within two to three weeks from their original roasting date, even if your favorite roasting company is claiming a longer shelf life.

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Reprinted from *Coffee Talk Magazine* April 1997.

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