

the ROASTERS realm

Confessions of an Air Roaster

By Norman Killmon, The Roasterie

Drum roasters dominate the industry-they should; they have had a 150-year head start! I have had the opportunity to roast on small drum roasters, large continuous models, suicidal pressure roasters, and for the past 10 years, fluid-bed roasters. All of us can come to (some) agreement on the raw input to the roaster, but there are some us out here who believe there is a better way to roast coffee than with traditional drum roasters. When you champion air roasting, you always come across sounding like an advertisement for the manufacturer, as there is only one major player. That is not my intent. I would just like to give a minority report on some of the advantages of air roasting.

I have loved each and every roaster I have used, so I am not getting up on my Blue Mountain keg to say this is the only way to go. I just want to point out some of the advantages of fluid-bed roasting and to remind everyone that we are still out here, crying in the wilderness.

From experience, the fluid-bed-roasting process burns cleaner. With drum roasting, the beans lay up against the drum; as the oils form on the drum surface, much of that residue is deposited back on the beans themselves. Fluid-bed roasting suspends the beans in a fountain of hot air and much less oil accumulates on the inner surface. Consequently, the roasting chamber of the air roaster stays cleaner than the drum roaster. If oils are forming on the roasting surface and accumulating, and you heat them over and over, some of that oil is transferred back into the coffee. This creates a different taste in the coffee. We on the fluid-bed side would say it's bitter; the drum roasters would say it has "more essence." But having done both, I can say that the difference in coffee oil accumulation is significant. These oils leave carcinogenic tars in the coffee and ultimately in the mouth at a higher level in drum roasting, which leads to a less smooth, more bitter cup of coffee.

Fluid-bed roasters, because of the large amount of airflow, remove most of the chaff into the

chaff collecting system. Drum roasters, which have less than half the air flow, burn most of these off. Indeed, you can see the small pin points of fire in the chamber as the chaff is consumed. The can-and now plastic-big guys mix their chaff back into their coffee for added weight; the drum roasters consume it; and the air roasters remove it. When you consume the chaff in the roaster you are fumigating the beans with smoke. One major advantage of air roasting is that the temperature that roasts the coffee is more accurately sensed in a fluid-bed roaster. The thermocouple is inside the roasting chamber and is sensing the air temperature that is roasting the beans; in essence, you know the bean temperature-something that is not possible with a drum roaster. This leads to a more accurate, repeatable roast. We cup every roast, and the consistency, roast-to-roast, day-to-day, is remarkable.

In my early days of roasting, I experienced many "so-this-is-how-it-ends" types of fires and explosions (The stories I could tell!). All roasting machines need to be respected when it comes to safety; you always have to be vigilant. Speaking only for the past 10 years of air roasting, we have never had an incident that I would consider scary. The stacks, when inspected recently, had very little buildup; they are very clean-burning machines. Drum roasters run hotter and have more build-up of oils and chaff, which in most cases are catalysts for such incidents. But fluid-bed roasters can and have had fires and explosions, so caution and knowledge is always a must.

Ease of operation is another difference between air and drum roasters. When you run a drum roaster, you must constantly monitor the end product, sampling the product on a regular basis

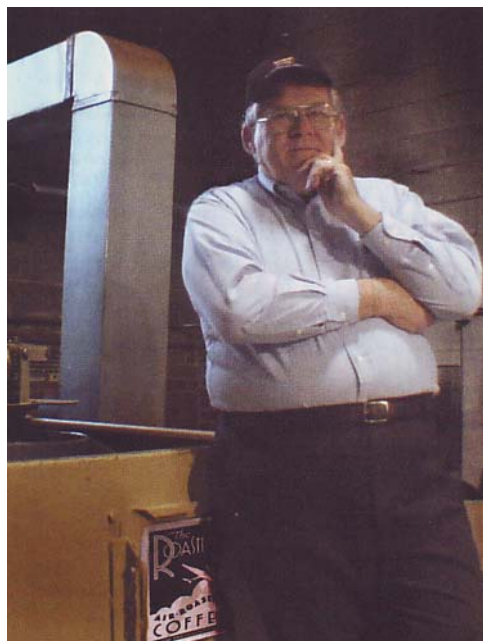


to determine the final result. Air roasters have no way to sample the roast on a periodic basis. You set the temperature and pull it off when it's done; many would say this is a major disadvantage - a step closer to removing the human element and the craft. The roast master still has plenty to do when using an air roaster, and the ease of operation should not diminish one's status as a craftsman. As mentioned earlier, we find cup roast profiles to be very repeatable with our fluid-bed roaster, because of the ease of operation and the roast master's skill.

Maintenance on our three air roasters has been minimal, as they all have only one major moving part. We have never had to replace a motor or burner assembly. We grease the motors every month, but there is no day-to-day maintenance required. A joke amongst air roasters is that no one has a machine that came out of the factory looking like it does now; they have all been modified. We have added safety features and ease-of-use features to our machines, but the mechanical parts of the machines are simple and parts are available off-the-shelf from local suppliers.

Most people don't get to roast on a variety of machines; I have been fortunate to have done so. I have spent most of my years drum roasting, and every one of those machines brings back fond memories. But fluid-bed roasters have been a good fit us; they are in some ways the "super automatics" of the roasting world. They have provided us with a consistent quality product, are low maintenance and very user-friendly. When my years are over in the coffee roasting world, I will have fond memories of air roasting also. The craft of roasting coffee is the medium where drum and air roasting come together; on that we should agree.

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Norman Killmon is the Roast Master / Green Coffee Buyer (AKA: "Bean Browner") at the Roasterie, in Kansas City, MO.



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