THE ART of BLENDING

by Dr. Joseph John

Much of what is sold as specialty coffee in North America is single-origin coffee, often called "straight" coffee, and sometimes misnamed "varietal." This may be coffee from a single producing country, coffee from a region of a producing country obtained by pooling various estate coffees, coffee from a single estate, or even coffee from selected blocks (in one estate) growing a single cultivar. In any case, the coffee exhibits a profile in the cup that is characteristic of its origin—the place where that coffee is grown.

The cup profile of a single-origin coffee can be modified to a certain extent by aging, by changing the degree of roast or by doing both. Such fine-tuning provides an added variety in the cup without straying from the purity of a single-origin concept. Aging tends to reduce acidity, increase body and develop certain flavor nuances that are unique to the process. Roasting darker influences the cup in a similar way—reducing acidity and increasing body—but flavor notes in dark-roasted coffee are dominated by those of caramelized sugars.

There are over 80 coffee-producing countries around the world, each cultivating a product that is somewhat different from that of another origin. This might lead one to assume that there is a coffee produced somewhere to please every palate. Unfortunately, this is not always the case. Still, there is a way to overcome this issue: artisan blending, or the craft of integrating different coffees to create a tailored blend with a character and complexity that is just as exciting as that of the finest single-origins.

Rationale for Blending

A blend is produced by using two or more coffees to yield a cup with characteristics that simply cannot be obtained with coffee from any one origin. In some cases, a blend produces a better character profile; other times it yields a more complete or balanced profile, and in still others it offers a profile that is merely different from that of the straights used in the blend.

My first exposure to the practice of blending occurred about 10 years ago, soon after I entered the coffee importing business. To speed up my coffee education, an industry friend gave me a pound of Kenya peaberry, a grade seldom seen in North America. The coffee was intensely acidic—more so than Kenya AA—and its flavor notes of berries and fruits overwhelmed my palate. Consuming more than a third of a cup was impossible for me. Cutting in an equal amount of a low-acid coffee from India I had at the time yielded a more balanced cup, markedly reducing its acidity but allowing flavor notes of the Kenyan coffee to emerge. It was a very exciting and satisfying experiment in blending for someone so new to the coffee business.

There are other, less noble, perhaps more commercially justifiable, arguments in support of blending. First, by developing proprietary blends, roasters can differentiate a product from the competition and thus make direct price and value comparisons difficult. This is a legitimate use of coffee knowledge—even in the context of specialty coffee—provided quality in the cup is not compromised and blending is done to accentuate good features of a coffee rather than to cover up defects.

A side benefit of this practice is that variations from crop to crop, lot to lot or bag to bag in characteristics of a given coffee can be compensated for, or camouflaged, by careful blending, thereby insulating the consumer from the vagaries of an agricultural product.

A second use for blending, which is frequently practiced by the commercial coffee industry, is cost control. By using widely available, less-expensive coffees, and by varying the proportion of these coffees in a blend, roasters are able to control average cost of the product, often without any regard to quality or value to the consumer. Sadly, large commercial roasters adding cheap, rubbery robusta to increase profit has given all robusta and the practice of blending a bad name.

A third—and deceitful—use of blending is to exploit market popularity—and resulting high price—of a specific coffee without providing the real thing. Kona and Jamaican Blue Mountain coffees have both been victims of this practice. Often consumers are duped into buying products that carry origin names with qualifiers attached, such as "style," "blend" or "type." They pay relatively high prices, yet they receive only a small portion of Kona or Jamaican in these blends.

Blending for espresso is unlike blending for brewed coffee, because the two beverages are vastly different. Brewed coffee extracts only the water-soluble components in ground coffee, whereas oils in ground coffee also have to be emulsified for it to be an espresso. These oil droplets markedly alter the flavor profile and mouth feel of the concentrated beverage. Brewed coffee, regardless of how it is made, can accommodate a wider range of final product characteristics in terms of acidity, body, aroma, taste, and aftertaste.

Italian espresso, on the other hand, exhibits a much more narrow spectrum of characteristics in terms of acidity, body, color, crema, aroma, taste, and aftertaste. For example, high acidity, considered by many to be a virtue in brewed coffee, is not desirable in quality espresso. Because of the way espresso is made, perceived acidity is much higher in espresso compared to brewed coffee from the same blend. Thus, good espresso blends are low in acidity.

Blending for Brewed Coffee

Roasting each straight coffee to different degrees and tasting each sample separately to gain a detailed understanding of its cup characteristics is a prerequisite to successful blending. Tasting should start when coffee is hot and continue until it is completely cold. A vivid memory of these characteristics is key to obtaining good results from the blending process. Like a great chef, a blender's ability to visualize how flavor nuances of various coffees will intermingle is the mark of an artisan.

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When blending for brewed coffees, unlike for espresso blends, some indication of blend behavior can be obtained by mixing brewed straight coffees in various proportions in a cup. In other words, blending for brewed coffee appears to be a relatively simple additive process.

In these blending efforts, it helps to observe some broad guidelines. First, use only two or three coffees in a blend. Using more coffees complicates the process, with only marginal benefits. I know of blends that claim to combine nine different coffees. Other than as a gimmick, I cannot see the benefit of having so many coffees in a blend. I do not believe that the average coffee professional—much less most consumers—can discern the effect of the last bean of the ninth coffee.

A second useful rule is to use significant proportions of each coffee—at least 15 percent—in a blend so that each coffee's effect is easily perceived. Using a lower proportion is hardly worth the added complication.

For a single-origin purist, a "blend" of *one* straight coffee roasted at different degrees may be a good introduction to the blending experience. For example, a blend of a light cinnamon roast, a medium full city roast, and a dark and oily French roast of a single Central American or African coffee will show some interesting facets. These coffees have their acidity somewhat muted and body more developed as the roast gets darker. This is one way to enjoy caramelized sugars from the dark roast without totally compromising the coffee's origin features. A variation on this single coffee theme is to blend an aged coffee with the current crop of the same coffee, each roasted to the same degree or to different degrees.

Classic blends are produced from coffees that are complementary in nature, meaning characteristics of one coffee in a blend complement those of another. Most famous of all coffee blends is Moka-Java. Yemen Moka is a sharp, medium-bodied coffee with strong components of aroma and taste, ranging from flowery to fruity to nutty and many things in between. Java, on the other hand, is relatively low in acidity, high in body and has simple, earthy flavor characteristics with overtones of tropical spices. Combine these two in the right proportion and you get a more complete coffee, balanced in acidity, body and every aspect of aroma, taste and aftertaste—a result that is certainly different from either of its component coffees.

Cup characteristics of most coffees vary with the temperature of the brew, which is why coffee is cupped or tasted as it cools. Unfortunately, information collected in the cupping process is seldom carried over to the blending process. Unlike with espresso, consumers tend to linger over a cup of brewed coffee, starting when it is hot until it has cooled. Sometimes, it is even consumed cold to begin with, over ice. A small segment of the coffee industry uses low-acid coffees in blends to improve cup quality as a hot brew gets cold. They also use low-acid coffees in blends for cold or iced coffee drinks. Unfortunately, this application of low-acid coffees has yet to enter the mainstream consciousness.

A blending concept that is highly controversial is use of high-quality robusta to increase caffeine content of the beverage. This is not to be confused with the commercial practice of using cheap robusta to manage product cost. Robusta used in "specialty blends" is grown at high elevations also suitable for arabica. It is grown, harvested and processed with the same care and attention as arabica.

Blending for Espresso

Ideal Italian-style espresso is very low in acidity, high in body, and it features plenty of rich, velvety, persistent reddish brown crema that captures the aroma and taste of ground coffee. Crema is the single most important indicator of well-made espresso, and it is essential for capturing the intense flavors of ground coffee. Vapors produced during espresso extraction are contained in the tiny oil droplets, and as the espresso is consumed, these bubbles release bursts of volatile aroma molecules that find their way to the olfactory receptors in the nose through the pharynx. These droplets also tend to attach themselves to the taste buds, giving rise to a long aftertaste, which can linger for up to an hour after the espresso is drunk.

Some people prefer to make espresso from single coffees. While it may be the ultimate in simplicity, I believe the result is a compromise. Because no single coffee provides all of the physical and flavor characteristics in the right balance, quality espresso must combine two or more coffees.

For simplicity, I consider espresso characteristics in two broad yet distinct categories—physical properties, such as color, body and crema, and flavor characteristics, such as aroma, taste and aftertaste. Physical properties are then constructed out of one set of coffees, and flavor properties are derived from another set of coffees. Although these are not truly separable, I make selections such that coffees contributing heavily to color, body and crema make only modest contribution to aroma and taste, and vice versa. To the extent that this can be achieved, the two sets of variables are independently adjustable.

Natural coffees tend to produce more crema than their washed counterparts. If you can find a low-acid, natural coffee with lots of body, it would be an excellent foundation coffee for a quality espresso. Asian coffees, particularly those from Indonesia and India, and coffees from Brazil, offer excellent low-acid options.

Having selected a base coffee, it is time to decide if a high-quality robusta would be suitable for the blend. High-quality robusta is hard to find and expensive, often costing more than many arabicas. But espresso can be enhanced by using a premium robusta that is clean and mellow. Unlike commonly available grades, expensive robusta yields a smooth, mellow, soft cup with no rubbery aftertaste. Plus, it adds to the caffeine content of espresso for that "extra kick" many people look for. Robusta content of an espresso blend is controlled not only by the age and grade of the robusta and the darkness of its roast, but, more importantly, by what other coffees are in the blend.

Considering the fact that most espresso beverages sold in North America are milk-based, quality robustas are a valid way to help fortify a coffee. By cutting into the milk, robusta can help enhance the flavors of arabica.

Perhaps the most significant effect of premium robusta is its ability to enhance the richness and longevity of crema without detracting from the neutral character that is so critical for a superior espresso. It also adds to the unique flavor profile—typical of European espresso—that I believe cannot be obtained with arabica alone.

To bring flavor components into the blend, select one or two coffees whose aroma and taste you really like. I call them "highlighter coffees." These coffees could be medium- to low-bodied and even somewhat acidic. Start with one coffee and add a second flavoring coffee only if necessary.

Next, you must balance the blend. All features of the espresso should play together, and no feature should be overwhelming. It should be smooth, mellow, with lots of body, no unpleasant bitterness, and not even a hint of sourness. Crema should be plentiful, smooth, velvety, and persistent. Pay special attention to aftertaste. Aroma should be very pleasant so that when the oil bubbles burst, the vapors captured will flood the sensors in the nasal cavity and create a pleasurable experience.

Post- or Pre-Roast Blending

Whether blending is done as green coffee prior to roasting or after individual coffees are roasted depends on the nature of the coffees in a blend. Both blending protocols are entirely acceptable.

Post-roast blending affords the luxury to roast each coffee to a different degree in order to bring out the best in each component. It also offers the coffee retailer who does not roast his or her own coffees an opportunity to create proprietary blends. The obvious disadvantage of blending after roasting is the need for several roastings and potential waste if the roaster is committed to freshness.

Blending before roasting is possible when the coffees in a blend are compatible with respect to their roast characteristics. When coffees are dissimilar in bean size, density, moisture content, heat conductivity, and roast development profile, blending before roasting is difficult, and, in many cases, impossible.

My experience with Malabar Gold can be instructive. Initially, I roasted individual coffees separately and blended afterwards. Relentlessly committed to freshness, I roasted only to order and did

not keep coffee from one day's roast for later blending. Blending before roasting seemed attractive because it minimized waste, but initial attempts at roasting this green blend produced disastrous results. Monsooned Malabar-AA Super Grade is made up of extra bold beans with low bean density and moisture content, approximating 14.5 percent by weight. Robusta in that blend, on the other hand, has small, high-density beans, and moisture content is about 10.5 percent. From a roast perspective, these beans could not be more different.

At various roast levels, some beans remained "green and grassy," while others were clearly over-roasted. It took nearly three years, working diligently, to perfect this green pre-roast blend and offer it as a ready-to-roast coffee. In the process, I learned a lot about green coffee characteristics, and I now understand more about roast behavior of these coffees than ever before.

If you have been thinking about venturing into the area of blending, be prepared to embark on a wonderful coffee adventure. And remember, your blending experience will be limited only by your imagination.

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