

• Some General Suggestions •

Loose tea is a simple pleasure. Quality leaves and a pot of boiling water are the bare essentials. For those who wish to learn more, this guide should serve as a starting point on that journey.

Buying Tea

For those who drink tea regularly, we recommend stocking several varieties rather than a large supply of one. Any tea, no matter how enjoyable, may lose some of its appeal after many cups in a row. Breaking the pattern with new styles can greatly add to the overall enjoyment of tea.

Even when properly stored, a tea's flavor may fade in character over time. As the loss is gradual, it may go unnoticed until you receive a fresh batch and rediscover the lost subtle flavors. For optimum freshness, we recommend purchasing an amount that you can consume within three months.

Choose your source of teas carefully. Tea is an annual crop with several pickings during the year. The best grades come from select, seasonal events. Specialty retailers such as Upton Tea Imports will gladly pay a premium to get these fine teas. They can also sell enough product to guarantee that you are getting fresh teas.

Quantity of Tea

For consistency, we recommend measuring 2¼ grams of dry leaf for each six ounces of water. For those who prefer to measure the leaf by volume, we offer the following guidelines:

Type of Tea	Amount of Tea
Very fine-leaf particle teas (C.T.C. grades and finest Darjeelings)	½ to 1 tsp
Scented and fruit-flavored teas (Jasmine, Earl Grey, etc.)	½ to 1 tsp
BOP and small whole-leaf grades (GBOP, BOP, and "Tippy" teas)	1 tsp
Medium whole-leaf grades	1+ tsp (rounded tsp)
Large-leaf teas (Oolongs, Souchongs)	2 tsp
White Teas (Shou Mei, Mutan, etc.)	3+ tsp (rounded tbsp)

One of the joys of brewing loose leaf tea is that the strength can be adjusted according to personal preference. Remember that tea goes a long way, and a measuring teaspoon is much smaller than the size of an average American dining teaspoon.

Storing Tea

Tea should be stored at room temperature in an air-tight container, away from moisture and light. Store large quantities of tea in a master container and keep the rest in a small dispensing container for everyday use. Each time a container is opened, air exchange takes place and slowly robs tea of its flavor. By minimizing the amount exposed to air, you can greatly prolong the life of a tea.

Stainless steel or glazed ceramic caddies are recommended. We do not recommend clear containers.

Preparing Tea

Brewing a good cup of tea is quite simple, and attention to a few details will ensure excellent results. Fresh water and a proper teapot are both essential. If your source of water is suspect, try using bottled spring water. The subtle flavors of many teas can be destroyed by water that contains heavy concentrations of minerals or impurities. Certain geographic areas have water with heavy concentrations of calcium. This may cause a thin film to form on the surface of a cup of tea.

The correct water temperature is essential as well. Most black teas should be brewed with water that has been brought to a rolling boil. Thoroughly preheating the pot will further ensure a high brewing temperature and full flavor extraction.

While many brewing instructions will say to measure a teaspoon of tea for each cup and an extra "one for the pot," a small preheated teapot generally does not require this extra scoop. Begin with one teaspoon for each six ounces of water and adjust according to taste.

The optimum steeping time depends on the type of tea. Use the chart on page G2 as a general guide. Because most teas yield a pale brew, steep by time and not color. Too-short an infusion will result in a thin, insipid tea. Extended steeping will yield a bitter tea with an overpowering level of tannin.

When brewing tea for more than one serving, use an infuser or strainer to remove the tea leaves and avoid oversteeping.

Water Temperature

Most black teas and some Oolong teas should be prepared with boiling water. Green teas, white teas, Jasmine teas, and lighter Oolongs should be steeped with water no hotter than 180°F. Very fine Gyokuro is often best when steeped with water closer to 140°F.

Steeping Time

The general rule for steeping is the smaller the leaf size, the shorter the brewing time. Use this table as a starting point:

Type of Tea	Steeping Time
White, Green, Jasmine, First Flush Darjeeling, and C.T.C. teas	2-3 minutes
Broken Orange Pekoe (BOP), Darjeelings, and flavored teas	3-4 minutes
Most whole-leaf teas, and black teas to be served with milk or lemon	4-5 minutes
Chinese large-leaf other than green (Lapsang Souchong, Pu-Erh, etc.)	5-6 minutes
Herbal teas (Chamomile, Rooibos, etc.)	8 minutes
Fruit based teas (Strawberry/Kiwi, Peach Melba, etc.)	8-10 minutes

Kung Fu (Gong Fu) Tea

Kung Fu (Gong Fu) is a traditional method of tea preparation, used for centuries in China.

To make Gong Fu style tea, put tea leaves in a small pot or cup and rinse briefly with hot water. Steep with fresh water for one minute and serve in small, half-ounce cups. Reuse the leaves for several steepings.

Iced Tea

Nearly any loose tea can be used to make iced tea. To get clear, delicious tea we recommend the cold steeping method.

Double or triple the quantity of tea recommended on page G1. Place the tea leaves in a clean jug and add the appropriate amount of cold water. Let stand in the refrigerator overnight (or for at least six hours). Remove the leaves and enjoy.

Common Leaf Variations

Abbreviation	Definition
BOP	Broken Orange Pekoe
GBOP	Golden Broken Orange Pekoe
FBOP	Flowery Broken Orange Pekoe
FOP	Flowery Orange Pekoe
TGFOP	Tippy Golden Flowery Orange Pekoe
FTGFOP	Fine Tippy Golden Flowery Orange Pekoe
FTGFOP1	Fine Tippy Golden Flowery Orange Pekoe, Grade 1
SFTGFOP1	Super Fine Tippy Golden Flowery Orange Pekoe, Grade 1

Leaf Style - BOP to SFTGFOP

We are often asked the meaning of the long strings of letters appended to the names of India teas. These acronyms are stenciled on the tea chests and appear on sample packets and documentation originating from tea estates and brokers.

Orange Pekoe, abbreviated OP, is perhaps the most misunderstood of all. Contrary to popular opinion and the marketing efforts of many, Orange Pekoe does not refer to a particular flavor, variety, or even quality of a tea. It is nothing more than a designation of leaf size, resulting from the sifting of finished tea.

During the manufacturing process, the leaves are bruised, withered, and dried. This handling creates a product with leaf particles of varying sizes. The final step is to sift the production batch into smaller lots of uniform leaf size. A lot that is poorly sorted, and comprised of leaf particles of widely varying sizes is called *choppy*.

Teas designated OP consist of larger leaf particles or whole leaves that will not pass through a sieve of a particular gauge. BOP (Broken Orange Pekoe) designates a grade that is finer than OP. Grades finer than BOP are labeled PF (Pekoe Fannings). Dust is the smallest grade sold and is reserved primarily for use in teabags.

Additional letters are added to this root acronym to more fully describe the leaf style and appearance. The chart at lower left lists some of the common variations.

Tea and Caffeine

All real teas are made from the tea plant, *Camellia sinensis*, a caffeine-producing bush. On average, a cup of tea has 40-50 mg of caffeine, which is approximately half the caffeine content in a cup of coffee.

Caffeine content is not related to the level of fermentation (oxidation), so white, green, oolong, and black teas made from the same variety of *Camellia sinensis* will have essentially the same level of caffeine in the dry leaf. But this factoid can be misleading.

The processes used to produce most black teas may play a factor in the caffeine extraction rate due to the crushing of the leaf cells during manufacture. The caffeine extraction from unprocessed leaf (white tea) is theoretically slower than for the highly processed (crushed cell) leaf. Also, *china* varieties (including those grown in Japan) have less caffeine than *assamica* varieties, further explaining why green and white teas tend to show lower caffeine levels when evaluated scientifically.

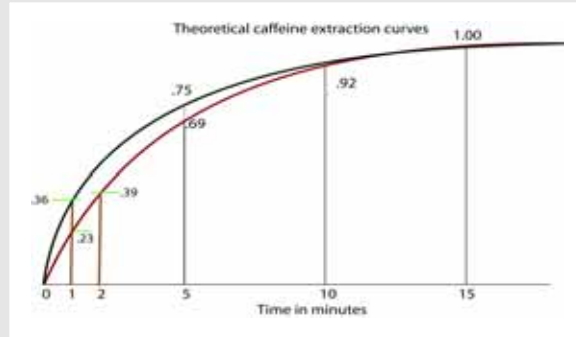
Caffeine Extraction during Steeping

Part of the enjoyment of tea is the mild stimulating effect of its caffeine. In fact, William Ukers (*All About Tea*, Volume 1) states rather directly that without caffeine, the popularity of tea would be greatly diminished. That being said, those who are concerned about their level of caffeine intake, and those who have been advised against it by their doctor, often turn to decaffeinated teas as a solution. But the decaffeination process for tea tends to result in compromised flavor, and the finest teas are never decaffeinated. Some turn to tisanes as an alternative, but are there no other options for those who prefer reduced caffeine *and* the flavor of real tea? To some extent, there is.

There has been much discussion recently on the process of removing caffeine from tea by discarding the first potful following a brief steeping. The second steeping will, by all accounts, result in a reduced caffeine level. Upton Tea Imports was the first to suggest this technique in the U.S. in 1989, but does it really work? More precisely, can the caffeine level be reduced by as much as 80%, and how long must the first steeping be to achieve this level of decaffeination?

The earliest known credible reference to this decaffeination method appeared in the French language version of Paris-based *Betjeman & Barton's* tea catalog, published in 1989. The level of scientific support for this decaffeination concept is unknown, but it was based on the extraction characteristics of caffeine in hot water compared to the extraction characteristics of flavor components.

Detractors to this concept have shown evidence that the claim for significant caffeine removal by pre-steeping is a myth. But, unfortunately, such arguments are often based on limited data. One recent argument was based on the interpolation of three data points for caffeine extraction: 69% at five minutes, 92% at ten minutes, and 100% at fifteen minutes. Since 100% of any solid cannot be extracted in solutions of less than infinite volume *and* for an infinite time interval, we question the precision of the third data point. Nonetheless, we can glean some information from this data. By adding the most accurate of all data points to the supplied set of three, (i.e., that 0% caffeine would be extracted at 0 minutes), one can fit a simple Bézier curve to the four data points, as done at the right (red arc). This curve suggests, by extrapolation, that only 23% of the caffeine would be extracted in one minute, while 39% would be



extracted in two minutes. Note that this varies from the figures of 18% and 32% from the author's data, but still, the extraction is less than 50% even at two minutes.

William Ukers (*All About Tea*) presents another set of data. His study compares the extraction of caffeine after a 5-minute infusion (3.6%) against a 1-hour boiling of tea leaves (4.8%). This suggests a 75% extraction at five minutes, yielding a substantially different curve (green arc). We extrapolate a 36% extraction in one minute.

Another study adds further confusion to the mix. In an article entitled *Decaffeination of fresh green tea leaf (Camellia sinensis) by hot water treatment*, Huiling Lianga, Yuerong Liang, Junjie Donga, et. al. present the results of research conducted at the Tea Research Institute, Zhejiang University. Briefly, they conclude that for unrolled green tea 83% of the caffeine is removed in three minutes, while 95% of the tea catechins are retained! They conclude that, "the hot water treatment is a safe and inexpensive method for decaffeinating green tea." This method is not recommended for rolled teas (including blacks), as too much of the flavor components will be extracted in three minutes as well.

What next? We conclude that further research is necessary. Upton Tea Imports will be funding additional studies, with focus on the early extraction of caffeine, rather than longer extractions and extrapolation to shorter timings. One neglected data set still must be collected: how much caffeine is in a cup steeped with leaves that have already had a hot water rinse? This is the real issue.

We will publish the results of our study when they become available. Meanwhile, we recommend considering what some of our customers have discovered. When only one member of a household wishes to limit caffeine intake, double steeping can often satisfy two embibers at half the cost. The caffeine-reduced second steeping will, generally, have more flavor than a decaffeinated tea.