Recommendations For the Preparation of Iced & Hot Tea

Issued by The Tea Association of the U.S.A., Inc.
In Cooperation with The National Restaurant Association

Tea Brewing – Training Manual

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I. Letter from Chairman

To Members of the Foodservice Industry:

This manual has been updated to continue to provide continuity and consistency to foodservice training regarding the recommended preparation of iced and hot tea.

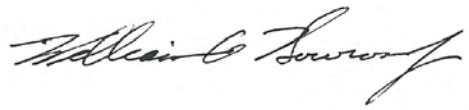
As a service it is being provided to all county and state health authorities within the United States.

It should be followed as a guideline because:

1. Tea is the first or second largest percentage revenue producer for most restaurants and therefore deserves close and continuous attention.
2. Turnover rates cause a tremendous need for us
3. The manual will enable the operator to serve the highest quality tea and thus minimize the potential of negative publicity.

The guidelines are provided as a service to the foodservice industry by the Tea Association of the USA. They are based on the most current scientific and technical information available. While there has never been a confirmed illness associated with the consumption of tea, in light of the myriad ways in which any food may become unsafe for consumption, the Tea Association cannot guarantee that merely following these sanitary recommendations will eliminate all risk of human illness. Furthermore, the sanitary guidelines contained herein should not be considered as a replacement for compliance with all other applicable sanitation standards and requirements. Continuous attention to all aspects of foodservice sanitation is critical to the health and safety of your patrons and the continued popularity of tea as a beverage.

Tea Association of the United States, Inc.



William A. Bowron, Jr.
Chairman

II. Start with a Good Beginning

A. Water Filtration

1. Background

- Brewed leaf iced tea is 99% local water. Due to tea's light flavor, the quality of input water is crucial to the end product served
- Clarity, color and taste are the most important iced tea characteristics. Clarity can be adversely affected by high mineral content in water
- Coffee equipment, as well as the new generation of automatic iced tea brewers, contain water solenoid valves, spray heads and heating elements which are susceptible to particulate clogging and scale/lime buildup especially in high mineral areas

2. Water Problems Affecting Ice Tea Quality

- Water Hardness – caused by high mineral content (i.e. calcium and magnesium). Tests show any hardness in excess of 200 ppm can cause clouding in iced tea
- Chemical taste and/or odor caused by chlorination of municipal water and the presence of hydrogen sulfide in the water
- Particulate Matter/Scale and Lime Accumulation – adversely affects the operational efficiency of automatic tea brewing equipment

3. The Solution

To minimize problems associated with a less than optimal water supply, the Tea Association recommends installation of appropriate filtration/conditioning equipment

a) Desired Water Filter Characteristics

- Mechanical particulate filtration at a minimum 20 micron level (40 microns can be seen unaided)
- Activated carbon filter to remove soluble organic chemicals, taste and odor causing compounds and chlorine
- Lime/scale inhibitors to keep calcium and magnesium in suspension and separated from product bonding and reduce buildup on heaters and spray heads (which does not inhibit clouding tendency)
- Easy cartridge replacement
- Maximum of 6 months cartridge life for average commercial use. (Print installation date on filter for monitoring purposes.)
- One all-purpose filter effective for all identified problems except water hardness
- If possible, water which will be used cold (or room temperature) for diluting iced tea after brewing should not be passed through the filter and then stored in some type of vessel, etc.: it would be best to use the water directly from the filtering system (If a storage vessel must be used, care must be taken to prevent contamination, which may include changing filters more often than every 6 months, since the filtered water no longer contains chlorine to destroy microbes)

b) Water Conditioning Equipment

- Water softening equipment to reduce or eliminate water hardness caused by excessive mineral content
- Proper maintenance and cartridge replacement or recharging of this equipment according to manufacturer's recommendation to ensure optimal performance

c) Hard Water

- In extreme hard water areas, use a preventive maintenance service arrangement

B. Tea Brewing Recommendations

1. Iced Tea

a) Automatic Ice Tea Brewing Equipment (3-5 gallon brewing system)

1. Place tea pouch pack into brewing basket. For loose tea, place new filter and tea into brewing basket.
2. Place a clean, sanitized urn with cover in position.
3. Following the manufacturer's instructions, start brewing cycle. Brew water should be at least 195°F with a brew basket retention time of not less than one minute. For optimal quality, a total brew cycle of between 3-5 minutes is recommended. Brewing equipment must be checked periodically to assure that this temperature is being achieved.
4. When brewing is finished, stir contents of dispensing urn with a sanitized stirrer if brewing equipment is not equipped with an auto-blend feature and put cover in position.

b) Automatic Coffee Machine Method/Pourover system (for each gallon of iced tea)

1. Place one 1oz. tea pouch pack into filter basket.*
2. Slide filter basket under brewing head.
3. Place sanitized pot under brew basket and start brew cycle. Brew water should be at least 195°F with a brew basket retention time of not less than one minute. For optimal quality, a total brew cycle of between 3-5 minutes is recommended. Brewing equipment must be checked periodically to assure that this temperature is being achieved.
4. Pour concentrate into a clean, sanitized urn, add fresh, cold tap water to equal one gallon.

*** NOTE: For the highest quality iced tea, use a dedicated brew basket and tea decanter for tea use only.**

c) Traditional Steeping Method (each one ounce bag makes one gallon of iced tea)

1. Place tea into a clean, sanitized container for each gallon of iced tea desired.
2. Preferably, pour one quart of boiling water for each tea bag used and steep for 3-5 minutes. Minimally, tea leaves should be exposed to water at a temperature of 195°F for approximately 5 minutes.
3. Carefully remove tea bag and add fresh, cold tap water to yield final quantity of iced tea.

d) **For commercial purposes,** "sun" tea is not an acceptable practice for steeping tea.

2. Tea Tips

1. Store tea bags in a dark, cool and dry place away from strong odors and moisture. Do not refrigerate.
2. Never hold finished brewed tea for more than twelve hours at room temperature. Discard any unused tea after twelve hours.
3. Brew only enough tea that you reasonably expect to sell within a few hours.
4. To protect tea flavor and to avoid bacterial contamination and growth, clean and sanitize tea brewing, storage and dispensing equipment at least once a day.
5. For any method described, use a calibrated thermometer each week to make sure that brewing water in your equipment meets the recommended temperature.

C. Sanitation Practice for Fresh-Brewed Ice Tea Equipment

Brewed leaf tea is 99% local water. Its flavor is such that the quality of the water and condition of the brewing equipment is crucial to a quality fresh-brewed iced tea product. To guarantee your brewing equipment is clean and your customers receive only the best fresh-brewed iced tea, follow these simple steps:

1. Brew only enough iced tea that you reasonably expect to sell within 12 hours. **Discard any unused tea after 12 hours.**
2. For automatic iced tea and automatic coffee machine equipment, tea should be brewed using water which is at least **195°F.** Tea leaves should remain in contact with the water for a minimum of 1 minute. For optimal quality, a total **brew cycle of between 3-5 minutes** is recommended.
3. To protect tea flavor and to avoid bacterial contamination and growth, **CLEAN** and **SANITIZE** tea brewing and storage equipment at least **ONCE A DAY** as follows:
   a) **Dismantle** dispensing spigots, hoses, storage reservoirs (removing gaskets, "O" rings, etc.) and rinse in warm water along with other brewing and storage utensils (e.g., pitchers, spoons, etc.)
   b) **Wash** using a good dish detergent, in hot water. Be sure to remove any encrusted soil deposits with a brush or cleaning pad if needed.
   c) **Rinse** thoroughly with clean hot water.
   d) **Sanitize** by immersing non-stainless steel parts for at least 1 minute in hot water at 180°F OR by rinsing in a solution of warm water mixed with chlorine (minimum 50 ppm - one cap full of chlorine bleach to one gallon of water). Do NOT use chlorine bleach on stainless steel urns or dispensers as it will promote small leaks *(See Manufacturers' Dispenser Cleaning Section).*
   e) **Disassemble** dispenser spigot and clean and sanitize according to manufacturers directions *(for example, see Sanitation of Spigots by company as described in Equipment Section)* Spigots are especially prone to contamination and need extra attention to maintain proper sanitation.
   f) **Replace** any worn gaskets, "O" rings, or any other badly scratched or damaged parts before reassembling. *(See diagram in Equipment Section for each company's equipment)*

D. Hot Tea Preparation and Merchandising

1. Raw Materials

a) The finished tea will be only as good as the quality of the water source and tea used in the preparation. The Tea Association recommends water filtration of the incoming supply and proper cleaning of all equipment. (See above)

b) The Association recommends starting with high quality tea. Ask your current supplier if he is a member of the Tea Association of the U.S.A., Inc. and seek information about all the specific blends he supplies.

2. Brewing and Service Instructions

Imperative in any discussion of brewing and service is the importance of training. Tea requires "careful" preparation, and the staff should be trained in the "why" the "how," and a little history of what they are presenting. When an establishment commits itself to a "good cup of tea", it will mean a bit more work initially, but the results, both to the bottom line and in customer satisfaction, will more than compensate.

1) Fresh cold water should be brought to a roiling boil, but not allowed to boil for a long period of time as it tends to dissipate the air bubbles therefore "flattening" the beverage and adversely affecting the taste.
2) A porcelain or porcelain-like teapot should ideally be used. However, non-breakable materials are available for heavy traffic restaurant service. The teapot should be pre-heated by pouring a small amount of boiling water into the pot and allowing it to sit for a few seconds.
3) A tea bag or bag(s) should be added to the pot according to size (1 bag per cup). Loose tea may be substituted (1 teaspoon per cup).
4) Boiling water should be poured directly over the tea and allowed to brew for 3-5 minutes.
5) Milk (never cream), sweetener, and lemon wedges should be made available.
6) At the appropriate time, the waitperson should offer a fresh cup of hot water and **provide a fresh teabag.**

E. Merchandising Hints

- Food service operators may want to promote tea by providing menu listings; by stocking several types of tea; and by having waitstaff suggest tea to the customer.
- Waitstaff should encourage tea consumption by allowing customers to select their tea from several types available. A tea chest is an excellent vehicle to use for this purpose and adds to the overall tea "experience".
- Waitstaff should ask customers if everything is to their satisfaction and readily offer fresh hot water with a fresh teabag. At 2-3 cents per serving, the foodservice operator has an excellent low cost/high profit means of creating a very favorable impression for their operation.

Given the potential profitability of tea and the growing popularity of this beverage among American consumers, it is in the foodservice operators' best interest to pay special attention to their service and merchandising methods.

III. Tea and Food Safety

There are three basic types of tea derived from the same plant known as Camellia Sinensis. The beverage has been safely consumed for nearly 5000 years without any documented reports of foodborne illness. As a result of the process which raw tea undergoes in production, the finished leaf is relatively free of harmful bacteria.

If the storage, brewing, and sanitation recommendations in this manual are followed, the end product will almost certainly be consumable without danger of illness. This statement assumes that the preparation area has not become a cross-contamination hazard from outside sources and that personnel practice proper hand washing techniques.

Based on these preparation techniques and the absence of a cross contamination risk potential, "fecal coliform" counts or reports of E.coli should be eliminated.

As a word of caution, tea leaves, as with most plant foods such as vegetables, may carry species of bacteria known as Klebsiella and Enterobacter species which are not harmful but frequently are responsible for false-positive fecal coliform tests indicating fecal contamination. Many times journalists, and specifically the test laboratories they have employed have used improper methods for testing which have led to errors and thereby improper test interpretations.

If a restaurant is cited for bacteria or E.coli or fecal contamination in tea, please immediately contact the Tea Association of the U.S.A., Inc. or the National Restaurant Association. These entities can provide the testing laboratory with the proper FDA recommended testing procedures which should prevent both the restaurant and the media from being embarrassed by a false positive reporting.

IV. Health Benefits of Tea

An Overview of Research on the Potential Health Benefits of Tea

Introduction

Tea is an ancient beverage steeped in history and romance and loved by many. In fact, so popular is tea that it is the most commonly consumed beverage in the world after water. Although tea had a modest beginning (it was discovered by accident), its popularity spread from its origins in China to Western Europe and the Americas. Throughout history, tea has been believed by many to aid the liver, destroy the typhoid germ, purify the body and preserve mental equilibrium. Over the past few decades, scientists have taken a closer look at the potential health benefits of tea and have discovered that much of the folklore about tea may actually be true.

How Tea Works in the Body

Tea contains flavonoids, naturally occurring compounds that have been shown to have antioxidant properties. Antioxidants work to neutralize free radicals, which scientists believe, over time, damage elements in the body, such as genetic material and lipids, and contribute to many chronic diseases. Recent research has explored the potential health attributes of tea through studies in humans and animal models, and through in vitro laboratory research. For the most part, studies conducted on Green, Black and White Tea, which are all from the Camellia Sinensis plant, have yielded similar results.

Tea's Role in Cardiovascular Health

Human population studies have found that people who regularly consume three or more cups of Black Tea per day have a reduced risk of heart disease and stroke. Clinical studies suggest that the risk reduction associated with Black Tea consumption may be due to improvement in some risk factors for cardiovascular disease, including blood vessel function, platelet function and a reduction in oxidative damage.

While researchers are still examining the various mechanisms by which tea flavonoids function, some studies suggest multifunctional mechanisms, meaning that several mechanisms work in tandem to collectively improve markers for cardiovascular health. Important areas of tea and cardiovascular health research include blood vessel and endothelial function, or the ability of the blood vessels to dilate to allow for proper blood flow, serum cholesterol levels and Low Density Lipoprotein (LDL) cholesterol oxidation. Each of these factors impact the risk of myocardial infarctions (heart attacks), stroke and cardiovascular disease.

Tea's Role in Cancer Risk Reduction

Preliminary research suggests that the flavonoids in tea could play a role in human cancer risk reduction possibly by combating free radical damage, inhibiting uncontrolled cell growth (cell proliferation), by promoting programmed cell death (apoptosis) and boosting the immune system to help fend off the development and promotion of cancer cells. Leading scientists worldwide are actively studying these potential mechanisms, and clinical trials and population studies are underway. More evidence is needed before any definitive conclusions can be drawn.

Tea's Role in Immune Function

Researchers from Brigham and Women's Hospital and Harvard University recently published novel new data indicating that tea contains a component that can help the body ward off infection and disease and that drinking tea may strengthen the immune system.

The researchers identified a substance in tea, L-theanine, which primes the immune system in fighting infection, bacteria, viruses and fungi. A subsequent human clinical trial showed that certain immune cells of participants who drank five cups of Black Tea a day for two to four weeks secreted up to four times more interferon, an important part of the body's immune defense, than at baseline. Consumption of the same amount of coffee for the same duration had no effect on interferon levels. According to the authors, this study suggests that drinking Black Tea provides the body's immune system with natural resistance to microbial infection.

Attention and Focus

Tea polyphenols are bioavailable to the brain and can act through iron-chelation, signal transduction modulation, and other mechanisms to effect neuroprotective and/or neurorescue action, with potential implications for age-related dementia, Alzheimer's and Parkinson's diseases. A unique tea amino acid, L-theanine (L-y-glutamylethylamide), plays a role in attentional processing in synergy with caffeine.

Tea's Role in Oral Health

Tea may also contribute to oral health. The flavonoids in tea may inhibit the plaque-forming ability of oral bacteria and the fluoride in tea may support healthy tooth enamel.

Tea and Reduced Risk of Kidney Stones

Increased intake of fluids is routinely recommended for people who have had kidney stones to reduce the likelihood of recurrence. A recent study that followed 81,093 women for eight years suggests that beverage choice may also affect kidney stones development. The study found that for each eight-ounce cup of tea consumed daily by female participants with no previous history of kidney stones, the risk of developing stones appeared to be lowered by eight percent. An earlier study of 45,289 men reported a similar relationship, suggesting that for each eight-ounce serving of tea consumed daily, a 14 percent decrease in risk of stone development was observed.

Tea and Reduced Risk of Osteoporosis

Although high caffeine intake has been suggested to be a risk factor for reduced bone mineral density (BMD), research indicates that drinking tea does not negatively affect BMD, and while it may be too soon to state definitively, findings suggest that tea may even play a role in bone health.

V. List of Resources to Call Upon

A. The Tea Association of the U.S.A.

362 5th Avenue, Suite 801
New York, NY 10001
Tel: (212) 986-9415
Fax: (212) 697-8658
Email Address: simrany@teausa.org

B. National Restaurant Association

175 W. Jackson Blvd., Suite 1500
Chicago, IL 60604-2814
Tel: (312) 715-5388
Fax: (312) 566-9729
Email Address: info@restaurant.org

C. Local Restaurant Association

D. Your Local Tea Supplier

VI. Background Information

A. History and Tradition

Far more than just a beverage, tea has a rich and important history that goes back nearly 5,000 years, and can be credited with everything from opening trade from the East to the West, to providing the catalyst for the American Revolutionary War.

The discovery of tea was something of an accident. According to legend, the year was 2737 B.C., and Chinese Emperor Shen Nung was boiling drinking water over an open fire, a regimen he followed because he believed those who drank boiled water were healthier. A few leaves from the burning branches of a Camellia Sinensis plant fell into the pot of water. The emperor, known as the "Divine Healer," drank the mixture and from then on, declared it gave one "vigor of body, contentment of mind, and determination of purpose."

And thus, the belief in tea's mysterious healing powers was established, and tea became popularly known, as it is today, as a healthy, soothing beverage for all occasions.

The first documented reference to tea came in 350 A.D. when Chinese scholar Kuo P'o wrote about "k'ut'u," a medicinal beverage "made from the leaves by boiling." By the fifth century A.D., tea became a major bartering tool for China, along with vinegar, rice, noodles, cabbage, fruits, and dried meats.

It also became a popular social custom for China's elite, with the imperial house and Buddhist priests enjoying royal blends and coveting a special "white" tea, considered the rarest and most delicate of teas.

The original site of tea cultivation has been debated for years, but it is generally agreed that the first tea garden was in the monsoon region of southeast Asia, then unclaimed by any nation, and now lying in an area that includes both China and India.

By the 8th Century, commercial cultivation of tea had spread throughout the Chinese provinces and, thereafter, into Japan. As in China, tea was first the exclusive domain of Japan's nobility and holy men. During the T'ang Dynasty (A.D. 620-907) its popularity spread to the common folk.

But it was nearly 1,000 years more before the pleasures of tea were introduced to the Western world. In the early 17th Century, Dutch traders brought tea from China and Japan to Europe.

By the mid-1600's, tea had been introduced to Britain, France, Germany, Holland, Scandinavia, Russia and America. Tea's popularity has been credited as playing a major role in opening the Orient to Occidental commerce.

While the Dutch held a near monopoly on trading for some time, it wasn't long before Britain muscled its way into the importation of what would become that nation's most popular beverage of ALL time.

After much bloodshed and some compromises, the British East India Trading Company wrested control of much of the tea trade from the Dutch and began importing enough tea that Britain's public had access to the delicious new drink. Before that, tea was limited to the upper class and consumed at only the most elite gatherings, costing six to ten British pounds per pound of tea.

In 1657, Thomas Garway, an English proprietor, got the bright idea of offering tea to the public, and the beverage quickly became the drink of choice, far outpacing wines and liquors. Taverns became deserted in favor of "coffee houses" (which were so named because the public sale of coffee pre-dated the sale of tea by a few years).

The coffee houses wielded so much power that a threatened King Charles II shut them down in 1675, calling the selling of tea a virtual act of sedition. A month later, the king had to recant his edict when the tea, coffee and chocolate dealers rose up in protest. Of course, the fact that the king's wife, Queen Catherine of Braganza, was a tea drinker didn't help his cause, as she set an example for all of Britain's subjects to indulge in the new fashionable drink.

Unfortunately for those in power, Britain was losing all the taxes that accompanied liquor sales. But the government quickly remedied that situation by imposing a tea tax.

Across the Atlantic, the tea tax was causing another sort of commotion in the American colonies. While many other British taxes on goods bound for America had been repealed, the three pence per pound of tea remained intact to save the financially mismanaged British East India Company. Over a five-year period (1768-72), the colonies paid duty on nearly 2 million pounds of tea.

Inflamed by the tax and other restrictions on the shipping and receiving of tea in America, the Sons of Liberty attempted to block the consignees from accepting the taxed tea. In Philadelphia and New York, tea ships were turned back before entering the harbor. In Charleston, the tea was unloaded but kept under bond in a damp warehouse.

The Boston Sons of Liberty were determined to make more of a statement. On December 16, 1773, they let two ships sail into harbor. Samuel Adams, Paul Revere, and others, met in the Old South Meeting House to plot their strategy. After sending a message to the governor to turn back the tea, and having the message informed, the mob descended on the waterfront. Disguised as Native American Indians, they emptied 342 large chests of precious tea into the harbor.

The Boston Tea Party, as it became known, caused the British Parliament to pass a series of laws that Americans referred to as the "Intolerable Acts", limiting the political and geographic freedom of the colonists. These unjust acts were the direct cause for the convening of the First Continental Congress, which ultimately led to the Revolutionary War.

So, in a sense, Americans can thank tea for providing a cause to fight for independence.

Of course, Americans have continued to embrace tea ever since, adding their own distinctive traditions, like iced tea and the tea bag.

Iced tea was created at the 1904 Louisiana Purchase Exposition in St. Louis, Missouri. The temperature was soaring and the staff in the Far East Tea House couldn't get any fairgoers to even look their way, let alone sample their tea. So they poured the hot tea over ice cubes and the drink quickly became the exposition's most popular beverage.

At about the same time, an enterprising New York tea merchant, Thomas Sullivan, began sending out samples of tea in small silk bags to win customers who thought tea in tins was inconvenient. Before long, Sullivan was swamped with orders for the easy, pre-measured tea sacks, and thus, the tea bag was born.

Today, iced tea accounts for 80-85% of America's tea consumption. Of the more than 270 million pounds of tea packaged for consumption in the Unites States, more than 65% comes in teabags.

Tea is now grown and processed throughout the world, with the major tea growing regions in Argentina, Brazil, China, India, Indonesia, Kenya, Malawi and Sri Lanka. These regions have mountainous terrain with milder climates and rich soil. Since consumers are turning to all-natural, relaxing, and refreshing drinks, tea is one of the most compatible contemporary beverages for today's active and healthy lifestyle. Research is being conducted into the possible health benefits of this increasingly popular thirst-quencher and each day, new scientific evidence emerges, enhancing tea's already positive health image.

With a history dating nearly 5,000 years, and with more than 3,000 variations, the most widely consumed beverage in the world has firmly established itself as a beverage of historic and cultural importance, with unbeatable flavors and blends, and all-around appeal as the perfect beverage for today's health conscious lifestyles.

B. Types of Tea

There are more than 3,000 varieties of tea. Like wine, various types take their inherent taste and appearance characteristics from the regions in which they are grown. General tea types, Black Oolong or Green are all harvested from the same plant species, Camellia Sinensis. The difference in the three categories is determined by the amount of leaf oxidation that occurs during processing. The oxidation process was erroneously referred to for many years as "fermentation" but actually has nothing to do with the true chemical fermentation process.

1. Black Teas: Withered, rolled, fully oxidized and dried.
    a. **Assam:** Grown in the northeast Assam region of India. Bright color with full-bodied malt taste.
    b. **English Breakfast:** Traditionally a blend of China Keemun. Today, the blend has evolved to include many different origins. The goal is to create a rich, bright, full-bodied brew that can stand up to the addition of milk.
    c. **Darjeeling:** Known as the "champagne of tea." Grown in the foothills of the Himalayas, with a subtle flowery bouquet and a delicate muscatel flavor.
    d. **Ceylon Breakfast:** A blend of fine teas grown on the hillsides of Sri Lanka producing a rich golden liquor with superb flavor.
    e. **Keemun:** A fine black tea from the Anhui Province of China. It has a rich amber color and unique wine-like characteristic.
    f. **Lapsang Souchong:** A large leaf China black tea with a distinctive smoky flavor, resulting from its unique process.
    g. **Irish Breakfast:** Similar to English Breakfast but with more emphasis on the robust character of Assam tea.

2. Flavored Teas
   a. **Earl Grey:** A blend of fine black teas flavored with oil of bergamot.

3. Oolong Teas: Withered, rolled/processed partially oxidized and dried.

   This category is not indigenous to a particular region, but is produced mainly in China either on the mainland or on the island of Taiwan. Oolong teas have an extremely delicate fruity/nutty aroma and taste. The color and taste profiles can vary greatly due to the extent that the product is oxidized. There are a vast number of oolong types as the range/degree of oxidation is almost infinite, due to variables in time, temperature, humidity and volume of tea running through the system.
   a. **Black Dragon:** A delicate fruity tea from the Amoy, Foochow & Canton provinces of China & Taiwan.
   b. **China Oolong:** Select large leaf teas from China.
   c. **Formosa Oolong:** Teas from Taiwan, known for their "peach" flavor and aroma.

4. Green Tea: Withered, heated, rolled/processed and dried.
   a. **Pan Fired:** Green tea, the oxidation of which has been halted by intense dry heat. There are hundreds of types of green. Characteristic taste varies greatly from mild/fragrant to pungent/astringent. The color is yellowish-green. Gunpowder is a type of green that has been rolled into pellets, the size of which help to determine its level of quality.
   b. **Sencha:** Green tea that has been steamed to stop oxidation. This process creates a unique flavor bouquet.

5. **White Tea:** This unique type is air dried initially to stop fermentation. There is little or no physical leaf processing. Once the tea has air dried sufficiently, it is then heated in ovens. White tea ideally is the finest of plucking, sometimes including only the bud of the leaf in the case of "Silver Tip" tea.

C. Grades of Tea

As part of their processing, tea leaves go through sieves, with graduated mesh, to sort them for commercial sale. These sieves divide them into three grades: leaf, broken and fine.

Leaf grades are made up of the larger leaves left after the broken grades have been sifted out. In brewing, flavor and color come out of leaf grades more slowly than out of broken and fine grades. The primary leaf grades are known as Orange Pekoe (pronounced peck-o), Pekoe and Pekoe Souchong.

In orthodox manufacture, broken grades are made up of smaller, broken leaves, which vary in percentage to the marketing needs of countries in which they are produced. These broken grades make a darker, stronger beverage than their leafy counterparts.

Americans frequently believe they are getting a certain quality of tea when they buy Orange Pekoe. In actuality, the term has its origins in China where pekoe means "white hairs," a look attributed to the presence of white tea buds amid the tea leaves.

The derivation of "Orange" in Orange Pekoe is much less definitive. Its origins are traceable to the color of the rolled leaves during processing, the use of orange blossoms to scent tea, or to the early Dutch traders desire to link these teas to nobility (the House of Orange).

Today, Orange Pekoe simply denotes a size of the tea leaf. Orange Pekoe has nothing to do with the flavor or quality of tea. The Pekoe, Souchong, Broken Orange Fannings and Fines (Dust) designations are similarly used to indicate size of the Black tea leaf.

A brief description of the primary grades follows:

1. **Orange Pekoe:** Long, thin, wiry leaves which sometimes contain the white or yellow tip of the flower bud. The liquors are generally pale in color.
2. **Pekoe:** the leaves of this grade are shorter and not so wiry as Orange Pekoe and the liquors generally have more color.
3. **Souchong:** A bold and round leaf, with pale liquors.
4. **Broken Orange Pekoe (BOP):** Smaller than the leaf grades. The liquors have good color and strength in the cup and are the mainstay of a blend.
5. **Broken Pekoe (BP):** Slightly larger than Broken Orange Pekoe with rather less color in the cup; useful as a filler in a blend.
6. **Broken Pekoe Souchong:** A little larger or bolder than broken pekoe and in consequence lighter in the cup. It is also used as a filler.
7. **Broken Orange Pekoe Fanning (BOPF):** Much smaller than Broken Orange Pekoe and its main virtues are quick brewing with good color in the cup.
8. **Fines (dust):** This is the name for the smallest grade produced. Very useful for a quick brewing, strong cup of tea.

VII. Equipment Sanitation Recommendation by Company

BUNN TB3, TB3Q & TDO-4

BREWING INSTRUCTIONS

STEP 1
Begin each brew cycle with a clean, empty funnel and server.

STEP 2
Insert one tea pouch into the funnel.

STEP 3
Slide the loaded brew funnel into the funnel rails until it stops. Place the power switch in the ON position. Momentarily press and release the START switch.

STEP 4
When tea no longer drips from the funnel tip, carefully remove the brew funnel and discard the used tea pouch. Return the power switch to OFF to prevent a false start.

STEP 5
Fresh tea is available at the faucet. Drain the reservoir before starting another brew cycle.

DAILY CLEANING INSTRUCTIONS

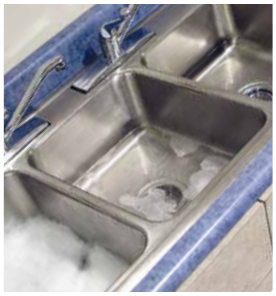
BREWER

STEP 1
Once a day, clean and sanitize the brew funnel, funnel tip and screen assembly.

STEP 2
Wipe the sprayhead panel and the entire outside surface of the brewer with a clean damp cloth.

TEA RESERVOIR

STEP 1
Once a day, turn the faucet in a counterclockwise direction and remove the faucet from the dispenser. Unscrew the faucet cap from the faucet body and disassemble all faucet parts.



STEP 2
Transfer these parts to a three compartment sink for cleaning. Fill the first sink with a soap solution using a mild detergent, the second sink is used for clean rinse, and the third sink with a sanitizer solution (75°F warm chlorine solution of at least 50-100 ppm).

STEP 3
Use a brush (BOM #00674.0000) to thoroughly scrub the faucet body.

STEP 4
Allow the parts to soak in a sanitizer solution for a minimum of ten minutes.

STEP 5
Remove the faucet parts from the sanitizer solution and rinse thoroughly. Allow parts to air dry over night.

TB3, TB3Q & TDO-4

WEEKLY CLEANING INSTRUCTIONS

BREWER

STEP 1

Once a week, remove and thoroughly rinse the sprayhead. The holes must be open and clear of any mineral deposits.

STEP 2

Insert the deliming spring into the sprayhead tube until about an inch is visible and move it in and out five or six times. Insert the spring into the air vent hole in the sprayhead panel and move it in and out five or six times. Reinstall the sprayhead.

STEP 3

Re-install the sprayhead.

TEA RESERVOIR

STEP 1

Once a week, fill the dispenser with a chlorine solution (75°F warm chlorine solution of at least 50-100 ppm).

STEP 2

Draw a small amount (2 oz.) of presoak through the faucet making contact with the faucet components. Allow the dispenser to soak over night. The next morning, perform the daily cleaning procedures on the faucet and dispenser.

MONTHLY CLEANING INSTRUCTIONS

TEA RESERVOIR

STEP 1

Once a month, replace the faucet seat cup (B.O.M. #00600.0000). Discard the old seat cup.

STEP 2

The faucet assembly (B.O.M. #03260.0001) can be ordered for replacement.

DO NOT KEEP BREWED BEVERAGES OVERNIGHT

ITCB

DAILY CLEANING INSTRUCTIONS

BREWER

STEP 1

Once a day, clean and sanitize both of the brew funnels, funnel tip and screen assembly.

STEP 2

Wipe the sprayhead panel clean with a damp cloth. Wipe down the entire outside surface of the brewer with a clean damp cloth.

AIRPOT

STEP 1

Open the airpot by pressing the buttons located on either side of the nozzle and lifting.

STEP 2

Remove the pump tube assembly.

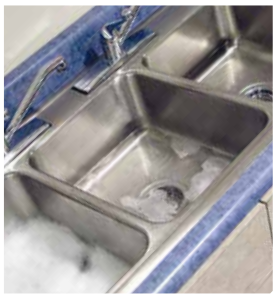
STEP 3

Thoroughly rinse the entire server.

TEA RESERVOIR

STEP 1

Once a day, turn the faucet in a counterclockwise direction and remove the faucet from the dispenser. Unscrew the faucet cap from the faucet body and disassemble all faucet parts.



STEP 2

Transfer these parts to a three compartment sink for cleaning. Fill the first sink with a soap solution using a mild detergent, the second sink is used for clean rinse, and the third sink with a sanitizer solution (75°F warm chlorine solution of at least 50-100 ppm).

STEP 3

Use a bristle brush (BOM #00674.0000) to thoroughly scrub the faucet body.

STEP 4

Allow the parts to soak in a sanitizer solution for a minimum of ten minutes.

STEP 5

Remove the faucet parts from the sanitizer solution and rinse thoroughly. Allow parts to air dry over night.

STEP 6

Thoroughly clean the entire inside surface of the dispenser and the faucet shank using a small brush (BOM #00674.0000) mild detergent and water solution. Thoroughly rinse the dispenser with clean water.

STEP 7

Prepare a sanitizer solution in a clean bucket (1/4 gallon). Use a commercial sanitizer that has 50-100 ppm of available chlorine with a concentration level of at least 3% available chlorine (KAY-5 Sanitizer). Follow the mixing instructions to ensure 100 ppm of available chlorine.

STEP 8

Pour a small amount of sanitizer solution into the dispenser. Use a bristle brush (BOM #00674.0000) to clean all the way through the faucet shank. Repeat several times.

STEP 9

Thoroughly rinse the dispenser with clean water. Allow the dispenser to air dry over night

STEP 10

Assemble the faucet components and attach the faucet to the dispenser turning clockwise.

ITCB

WEEKLY CLEANING INSTRUCTIONS

BREWER

STEP 1

Once a week, remove the sprayhead.

STEP 2

Remove and thoroughly rinse the sprayhead. The holes must be open and clear of any mineral deposits.

STEP 3

Use the long end of sprayhead cleaning tool to clean the sprayhead outlet fitting.

STEP 4

Re-install the sprayhead.

TEA RESERVOIR

STEP 1

Once a week, fill the dispenser with a chlorine solution (75°F warm chlorine solution of at least 50-100 ppm).

STEP 2

Draw a small amount (2 oz.) of presoak through the faucet making contact with the faucet components. Allow the dispenser to soak over night. The next morning, perform the daily cleaning procedures on the faucet and dispenser.

MONTHLY CLEANING INSTRUCTIONS

TEA RESERVOIR

STEP 1

Once a month, replace the faucet seat cup (B.O.M. #00600.0000). Discard the old seat cup.

STEP 2

The faucet assembly (B.O.M. #03260.0001) can be ordered for replacement.

DO NOT KEEP BREWED BEVERAGES OVERNIGHT

CLEANING AND SANITIZING INSTRUCTIONS

A. MACHINE:
Wipe exterior of machine with a soft damp cloth.

B. DISPENSER (ICED TEA CONTAINER):
Wash tea carrier with mild soap and warm water. Rinse thoroughly and replace on stand.

Proper cleaning and sanitizing of the faucet on your tea dispenser is necessary to deliver great tasting fresh brewed iced tea. Tomlinson SPB/SPBH faucets do not require tools for cleaning and sanitizing.

To prevent bacterial growth follow step by step sequence and refer to the diagram below.

Important: To prevent bacterial growth and protect tea flavor, clean and sanitize tea brewing and storage equipment at least once a day as follows:

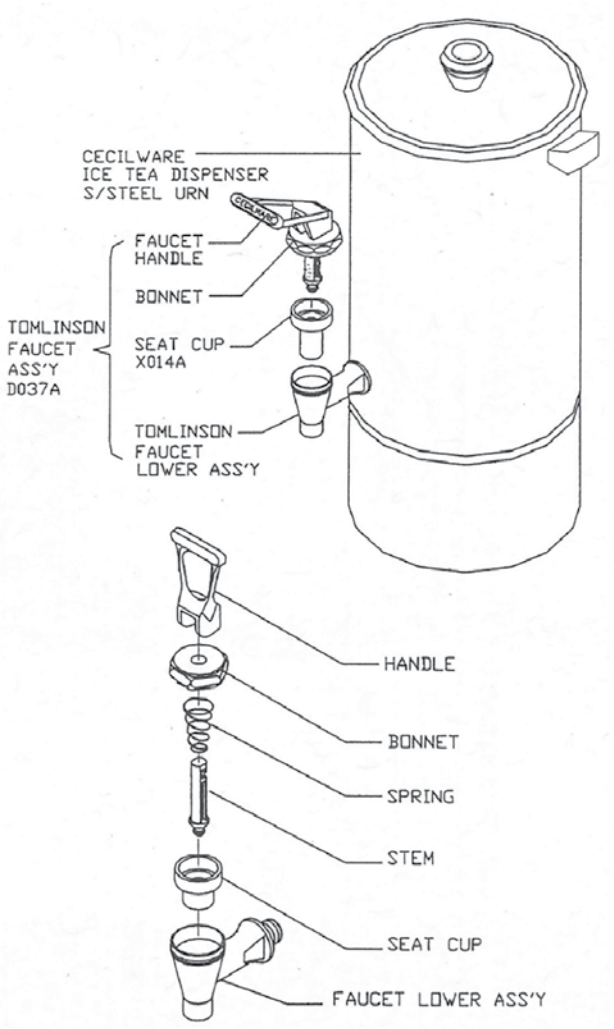
Container:

1. **Inside Surface** - Using hot water and dishwashing detergent, scrub interior of container with a bristle brush, including comers and bottom, to remove residues, then rinse thoroughly.
2. **Outside Surface** - Wash surface with sponge using hot water and dishwashing detergent.

Faucet:

1. Remove the entire upper assembly of faucet by unscrewing the bonnet.
2. Pull seat cup off from inside the upper assembly of faucet. Inspect for wear or hardening. Replace if necessary. Clean all parts, including faucet body in hot soapy water. Sanitize with chlorine (50 ppm), iodine (14 ppm) or quaternary ammonium compound (100 ppm). Air dry unit, do not wipe.
3. Snap seat cup over stem by applying direct pressure.
4. Screw upper assembly back onto the lower assembly of faucet. Hand tighten only.

NOTE: To dismantle all parts of the faucet upper assembly, apply pressure on the bottom of plastic cup, while pulling on top handle. Reassemble in reverse.



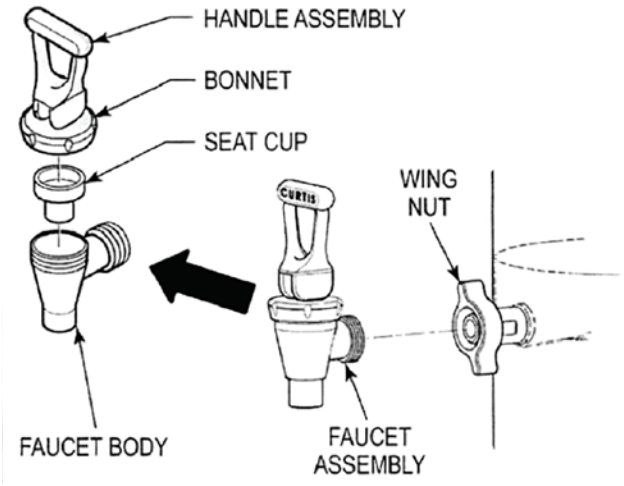
CLEANING & SANITIZING TEA BREWERS & CONTAINERS

Regular cleaning of your tea containers will maintain the highest quality iced tea your equipment is capable of producing. Proper cleaning is essential in preserving the appearance of the brewer and tea container.

1. Tum off the tea brewer at the ON/OFF button on the front control panel.
2. Wipe exterior surfaces with a damp cloth, removing spills and debris.
3. Slide the brewcone out and clean it. Wash the brewcone and wire brew basket, if applicable.

   Use a soft bristled brush for hard to clean areas. Wash both parts with a detergent solution. The brewcone and wire basket may be run through a dishwasher.

4. With the brewcone removed, wipe down the sprayhead area of the brewer with a mild detergent solution.
5. Drain the tea container.
6. Wash the container and top cover. Use a detergent solution and a soft bristled brush to clean inside the container.
   a. Wipe the exterior surfaces with a sponge and a mild detergent solution.
   b. Dry the surface with a clean, soft cloth.
7. Remove the faucet from the container. Release it from the shank by turning the wing nut clockwise.
8. Clean the faucet assembly.
   a. Remove the handle assembly by unscrewing the bonnet. The bonnet should be removable by hand.
   b. Clean the faucet shank with a gage glass brush (circular bristle) soaked in the detergent solution. Run the brush back and forth through the shank.
   c. Using the same brush clean inside the faucet body spout.
   d. Clean the faucet cap and silicone seat cup.



9. Rinse the faucet parts to remove all detergent used in cleaning.
10. After the rinse, place all the cleaned parts into a sink to be sanitized.
    a. Mix a commercial sanitizing solution such as Sanitabs. Other sanitizing solutions: Chlorine (50 ppm). Iodine (14 ppm). Quaternary ammonium compound (100 ppm). The sanitizing solution must be warm (75°F.).
    b. Submerge all parts the in sanitizing solution.
    c. Allow the parts to soak for at least one minute.
11. Remove the parts that are sanitized and air dry.
12. After cleaning, sanitizing and drying, assemble the parts that were removed.
13. Tum on the brewer at the control panel.

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