



Black vs Green Tea

Ingredients List

- Water
- Tea of choice

Equipment List

- Cup
- Kettle
- Scoop

Boil Water

1. Place tea or teabag in cup
2. Boil Water
3. Add water to cup
4. Let steep 3-5 minutes

Chemistry of Tea

Tea works by releasing chemical compounds, known as polyphenols into water. These chemicals are used by the plants to ward off predators and help with stress on the plant, but for us, they produce aroma, taste, and even health benefits.

All tea comes from the same plant, *Camellia sinensis*, but its processing produces the different varieties that people consume. Black tea and green tea are by far the most common varieties in the west.

Where the difference comes in their processing is oxidation. Green Tea leaves are heated immediately after they are picked which maintains the natural Polyphenol composition. By contrast, black tea is often crushed and mixed more after being picked. This breaks cell barriers and allows the polyphenols to mix and oxidize. This breaks down the polyphenols into different compounds, theaflavins and thearubigins, which give it its distinct color and flavor.

Experiment Results

My experiment did not give much in terms of conclusive results. A large part of this is I was unable to properly do a taste test due to no one being home and able to help me.

Procedure

In order to attempt to scientifically test how to best make tea, I compared Black and Green tea in two quantities, and let them steep for two different amounts of time.

I tested 1 gram and 2 grams of each type of tea, and let each each quantity steep for 3 and 5 minutes each. After this I did both a taste test and a colorimeter test, to see how much light each variation absorbed.

Taste Strength Ratings(Personal):

1 Gram of Tea

1. Green, 3 minute steep
2. Black, 5 minute steep
3. Green, 5 minute steep
4. Black, 3 minute steep

2 Grams of Tea

1. Green, 3 minute steep
2. Green, 5 minute steep
3. Black, 3 minute steep
4. Black, 5 minute steep

Colorimeter Test

	Green 1g	Green 2g	Black 1g	Black 2g
3 Minute Steep	.289/.197/.051/.000	.451/.256/.085/.000	.362/.169/.043/.000	.239/.092/.073/.000
5 Minute Steep	.327/.151/.058/.000	.575/.325/.133/.025	.209/.058/.045/.000	.196/.000/.000/.000

