

The different types of tea (*Camellia sinensis*) that are available are all mostly made from the same tea plants. It is the processing method that determines the type of tea that is made, not the tea plant cultivar. Different tea cultivars do have nuance differences in flavors. All tea made from *Camellia sinensis* starts by harvesting fresh, young leaves.

Green tea: a non-fermented type of tea made by withering*, steaming, rolling/shaping, and drying the leaves. It is mostly popular in East Asia, especially in Japan and China. The main active constituent of green tea is EGCG (Epigallocatechin Gallate), which is a plant-based compound commonly called catechin. One cup of green tea contains approximately 15-50 mg of caffeine.

Black tea: extensively oxidized* before being processed and is a fully fermented* form of tea. Withered leaves are rolled* for 15-60 min per roll and the number of rolls varies from 2 to 5 depending on several factors. After rolling, the leaves are fermented, dried, then sorted and graded. Black tea constitutes 80% of the total manufactured tea and hence is the most consumed tea; it contains about 17 mg of caffeine/100 ml.

Oolong tea: harvested leaves are withered followed by semi-fermentation, resulting in partial oxidation. The oxidation period for oolong tea is less than that for black tea. After the desired level of oxidation is reached, the leaves are pan-fried at high temperatures to prevent further oxidation. The taste and aroma of oolong tea is somewhere between green tea and black tea; it is mostly popular in Southeastern Asia and Taiwan.

White tea: a type of non-fermented tea obtained by drying the buds of *Camellia sinensis* with minimal processing; it is the least processed tea. The buds are shielded to prevent sun exposure, which leads to reduction in the formation of green pigment (chlorophyll) and leads to the final white appearance of young leaves. The harvested leaves are withered for 4-5 hours then dried to obtain the final product.

***Withering:** harvested fresh leaves are spread out in thin layers on trays and hot air is blown from the bottom to evaporate the moisture, leading to drying of leaves.

***Oxidized:** tea leaves are exposed to the air in order to dry and darken, contributing to the flavor, aroma, and strength of different teas.

***Fermented:** tea leaves are subjected to 24-27°C temperature and the leaf color changes from green to coppery red along with development of a pleasant characteristic aroma.

***Rolling:** tea leaves are rolled by hand or using a rolling machine to form wrinkled strips, which causes the tea to wrap around itself, ooze out the sap, essential oils, and juices in the leaves which further enhances the taste of the tea.