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# GROWING TEA IN THE PACIFIC NORTHWEST

## TEA TYPES AND HOME PROCESSING

All types of tea made with leaves of the tea plant *Camellia sinensis* can be made from the leaves of the same plant. This guide provides a summary of the different processes used to make the most common types of tea. Also included are step-by-step guides that can be followed at home to make each type of tea.

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### TEA WEBPAGE



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## Introduction

All types of tea made with leaves of the tea plant *Camellia sinensis* can be made from the leaves of the same plant. It is the processing method that determines the type of tea that is made, not the tea plant cultivar. Different tea cultivars do have nuanced differences in flavors, and different regions of the world are known for producing a certain type of tea.

## Tea Processing

All tea made from *Camellia sinensis* starts by harvesting fresh, young leaves. The top 2, 3, or up to 5 leaves (including the emerging top leaf) can be harvested. The steps for making tea at home can differ from how tea is made commercially. The key is to know what type of tea you would like to make and the processes that are needed to achieve this type. Here is a summary of the key processes that are used to make tea.

**Withering.** Harvested leaves are first withered to remove some moisture.

Harvested fresh leaves are spread out in a thin layer on a screen or bamboo tray and hot air is blown from the bottom to evaporate the moisture. Leaf moisture is reduced to about 70%. Without withering, the later steps can result in cooked leaves instead of the desired dried leaves. At home, tea leaves can first be dried slightly before moving to the next step.

**Bruising.** Tea leaves are physically handled to break down their cell walls to release cell contents and expose enzymes to the air. This process transforms the leaves' flavor, aroma, and color.

**Rolling.** Tea leaves are rolled by hand or using a rolling machine. This causes the tea leaf to wrap around itself and release cell contents including essential oils to the leaf surface. This enhances the strength and taste of the tea. Rolling can occur as a form of bruising to initiate oxidation, or after fixation to enhance the aroma and flavor and is also called shaping.

**Oxidized.** Tea leaf surface is broken (often by bruising), releasing cell contents to the leaf surface where they are exposed to the air, which causes the leaf to darken when dried with warm temperature. This contributes to the flavor, aroma, and strength of different teas.

**Fermented.** This term is used interchangeably with oxidation when describing processing tea leaves.

**Fixation.** Quickly heating the oxidized leaves, either by steaming (Japanese method) or heating in a pan/wok (Chinese method) to halt the oxidation process and preserve green color.

Withering tea leaves is often the first step for making most tea types. Leaves for green tea may be briefly withered or not at all. Kneading the leaves causes bruising, which initiates the oxidation process. Rolling and shaping intensify the oxidation process. Oxidation transforms the flavor, aroma, and color of the leaves, causing the dry leaf to be darker. Tea leaves are fixed by heating, which stops the oxidation process and darkening of the leaves. Leaves are then dried, which can be in the sun, indoors, or in a food dehydrator. Drying is the final step that removes residual moisture from the leaves making it suitable for storage.

## Types of Tea

Here are the main types of tea and some simple processing steps that can be followed at home to make each type. Note there are other teas in addition to the ones listed here, and there are many options for making each type of tea. We are providing the steps we have followed at home and found to be successful.

**White tea.** Non-oxidized tea simply made by drying the leaves. The least processed tea. Traditionally, the plants are shaded to prevent sun exposure and reduce chlorophyll content, leading to a pale leaf color. Non-shaded leaves can also be used to make this light flavored tea.

**Steps:** Harvest top 3 leaves. Dry leaves in the sun or indoors (Fig. 1 & 2). Do not touch leaves during drying.

**Red tea.** Oxidized, dark-colored dried leaves that produce a crimson-colored brewed tea. A smooth flavor profile with floral notes.

**Steps:** Harvest top 3 leaves. Dry leaves in a large metal bowl in a dark room (Fig 2). Turn leaves and knead or shape to cause bruising, two times per day for 4 days or until dry (Fig. 3).

**Green tea.** Tea with green color, with very little to no oxidation as the leaves are heat-treated very early in processing. Leaves are then rolled and often further heat-treated before drying. The main active constituent is epigallocatechin gallate (EGCG), commonly called catechin.

**Steps:** Harvest top 3 leaves. Pan-fry or wrap leaves in a towel and microwave for 1 to 2 min (Fig. 4). Spread leaves to cool. Roll leaves for 2 to 5 min, then (optional) pan fry leaves for 1 to 2 min. Leaves can be oven-dried at ~200 °F for 2 to 3 hr then air dried, or simply air dried as long as needed.

**Oolong tea.** Partially oxidized tea requiring more processing than green tea, but less than black tea. Oolong flavor is often floral and complex, while not being as “strong” as black tea. After the desired amount of oxidation is reached, leaves are heat-treated at high temperature to prevent further oxidation.

**Steps:** Harvest top 3 leaves. Spread leaves outside on a screen in direct sunlight for 15 min, then rest indoors for 1 hr. Hand-toss leaves for 2 min and rest for 1 hr; repeat 3 times or until leaves are generally 30% brown, 70% green (Fig. 2). Pan-fry leaves on medium heat for 3 to 4 min. Hand-roll leaves for 15 min and then air-dry for 3 days or as long as needed.

**Black tea.** Most extensively oxidized tea. Leaves are bruised throughout the drying process, with no heat treatment as it would slow oxidation. Rolling is often used to induce oxidation. Black tea constitutes 80% of the total world tea market.

**Steps:** Harvest top 2 to 5 leaves. Wrap leaves in cheesecloth and hand-roll for 2 min. Air-dry leaves for 3 days, with hand mixing and vigorously tossing 2 times per day.



Figure 1. Tea leaves spread out on a screen for drying (left), and screen on a rack drying indoors (right).



Figure 2. Drying tea leaves inside the house in a box placed in a sunny spot (left) and in a large metal bowl in a dark room (right), and a leaf that is 30% brown and 70% green.



**Figure 3.** Shaping or kneading (left), and rolling (right) tea leaves; the towel absorbs moisture, which aides in drying the leaves.



**Figure 4.** Tea leaves on a towel that is folded over the leaves and then placed in the microwave for 1 to 2 minutes for steaming (left), and pan fried on the stove (right).



*Figure 5. White tea (left), green tea (center) and black tea (right), each made following home processing steps.*