# Tea Oxidation: The Master Switch

From the teas.co.uk wiki

> **Tea oxidation, in summary:** Tea oxidation explained: same Camellia sinensis plant, processing decides category. The 0-100% spectrum from white through to black tea.

Oxidation is the single most important concept in tea: it is why one plant becomes green, white, oolong, black and dark tea. Grasp it and everything else falls into place. This sits in the tasting cluster beside the tasting guide.

*Last reviewed by the teas.co.uk team in March 2026.*

## One plant, many teas

All true tea is Camellia sinensis. The differences between green, oolong and black are made after picking, chiefly by how much the leaf is allowed to oxidise.

## What oxidation is

When tea leaf is bruised or rolled and exposed to air, natural enzymes (polyphenol oxidase) transform its polyphenols into theaflavins and thearubigins, darkening the leaf and developing colour, body and malty, fruity notes while reducing fresh, grassy ones. The rolling is what triggers it. It is closer to an apple browning than to fermentation.

## The spectrum

Green: oxidation halted early by heat, fresh and vegetal. White: minimal handling, delicate. Oolong: partial, anywhere from light and floral to dark and roasted. Black: full, malty and robust. Dark/pu erh: a separate microbial path, see oolong and black.

## Why it is the master switch

Oxidation level predicts colour, body, caffeine feel and food pairing more than any other single variable. Read "lightly oxidised" and you already know roughly how it will taste, see how to taste tea.

## Oxidation versus fermentation

The words are often muddled. Most "fermented" tea is actually oxidised; only true dark teas like pu erh involve microbial fermentation. Precision here marks real understanding.

### How it interacts with terroir and flush

Terroir and flush set the raw material; oxidation decides what is made of it. The three together explain almost any tea description, see flush and single origin.

### In a sentence

Oxidation is the master switch turning one plant into the whole tea world; understanding it lets you predict and choose tea with confidence, see the tasting guide.

### The oxidation spectrum at a glance

| Oxidation % | Tea type | Cup character |
|---|---|---|
| 0% (unoxidised) | White tea, green tea, yellow tea | Light, fresh, vegetal or floral; pale liquor |
| 10-30% (lightly oxidised) | Light oolong (Tieguanyin, Taiwan high mountain, pouchong) | Floral, fresh, slightly fruity; pale gold liquor |
| 30-60% (medium oxidised) | Mid-oxidised oolong (Dong Ding, Phoenix Dancong, traditional Tieguanyin) | Fruity, honeyed, sometimes roasted; gold to amber |
| 60-80% (heavily oxidised) | Dark oolong (Da Hong Pao, Wuyi Yancha, traditional roasted Tieguanyin) | Malty, dark-roasted, sometimes chocolaty; deep amber |
| ~100% (fully oxidised) | Black tea (Assam, Darjeeling, Ceylon, Kenyan, English Breakfast) | Malty, brisk, full-bodied; deep amber-red liquor |
| Post-fermented | Pu-erh (separate from oxidation; microbial fermentation after processing) | Earthy, woody, mellower with age |
| The master switch | Same plant (Camellia sinensis); oxidation level controls the cup category | |

### Taste the spectrum

To experience the whole range, taste across it: unoxidised green and white; lightly oxidised Tieguanyin oolong; heavily oxidised Da Hong Pao; fully oxidised Darjeeling or Assam; and post-fermented Pu-erh. Tasting two or three points on the spectrum side by side makes the idea concrete. Browse the full tea shop; free UK delivery is over £35.

**FROM THE CURATOR**

*teas* · Drink what you like, not what the shelf says you should. Curiosity is the only reliable guide.

### More tea reading

For broader category context see the black tea fundamentals, the green tea overview, the oolong tea, and the white tea. For Pu-erh-specific context see the Pu-erh wiki. For tasting context see the tea flavour wheel and the practical tea tasting guide.

### More from the tea wiki

- Green tea
- Black tea
- Oolong tea
- White tea
- Herbal tea
- Caffeine in tea
- How to make tea properly
- Loose leaf vs teabag


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