Oolong Oxidation: The Light to Dark Spectrum

From the teas.co.uk wiki

> **Oolong oxidation, in summary:** Oxidation is the plant-enzyme browning that defines oolong, dialled anywhere from about 10 to 70%. Where a tea sits on that range decides everything from a light floral cup to a dark, mineral, roasted one, and it tells you how to brew it.

Everyone repeats that oolong is "partially oxidised, between green and black tea", which is true but almost uselessly vague on its own. The useful version is that oolong is not one point on a scale but an enormous range, from very lightly oxidised teas that drink almost like a green to heavily oxidised ones that drink almost like a black, and the single biggest reason two oolongs taste nothing alike is where on that range they sit. Oxidation is the one piece of theory that makes the whole category make sense rather than feel like a random collection of names.

Last reviewed by the teas.co.uk team in January 2026.

What oxidation actually is

Oxidation is the enzymatic browning that happens when bruised tea leaf meets air, the same chemistry that browns a cut apple. In tea making it is deliberately encouraged and then halted by heat ("kill green", or sha qing) at a chosen moment. Green tea is heated almost at once so very little oxidation occurs; black tea is taken to full oxidation; oolong is the category whose makers stop somewhere in between, to capture flavours that neither extreme produces. It is a controlled step, not spoilage, and much of the maker's skill is judging exactly when to stop it.

Why the percentage matters

You will see oolongs described as "10 to 20%" or "60 to 80%" oxidised. The figures are approximate rather than laboratory-precise, but the principle holds. Lightly oxidised oolongs (jade Tieguanyin, many Taiwanese high-mountain teas) are green-gold, floral, fresh and delicate. Heavily oxidised ones (many Wuyi rock teas, traditional roasted styles, Oriental Beauty) are amber to red, fruity, honeyed and full bodied. Mid-range oolongs sit between. Roasting is a separate variable layered on top, adding toast and warmth without being the same thing as oxidation, a distinction many descriptions blur and a careful one keeps clear.

How the maker controls it

The percentage is the result of craft, not an automatic outcome, which is why the same plant yields such different teas. The leaf is first withered on trays for several hours to lose moisture and soften the cell walls. It is then gently bruised, by shaking in bamboo baskets (yao qing) or light tumbling in a slow drum, to break some leaf-edge cells without crushing the body; those broken edges release the plant enzyme (polyphenol oxidase) that starts the browning. Timed resting at controlled temperature and humidity follows, where more bruising cycles and longer waits mean more oxidation and the producer dials in the target. A burst of de-enzyming heat (sha qing), a quick pan-fry or hot-air tumble, then locks the leaf at that level, after which it is rolled, shaped and dried. The number on a Tieguanyin or Dong Ding pack is the sum of those careful bruise-rest-stop cycles, which is exactly the kind of judgement the how to judge tea quality guide rewards.

Oxidation is not fermentation

One persistent labelling muddle is worth clearing up: oxidation and fermentation are different processes, and the wrong word causes real confusion. Oxidation is the enzyme-driven browning described above, the leaf's own polyphenol oxidase reacting with oxygen once the cells are broken, with no microbes involved, closer to a browning apple than a sourdough starter. Fermentation proper involves microbes (bacteria, yeasts, moulds) converting compounds in the leaf, which is what happens in pu-erh but not in oolong, black, green or white tea. "Fermented tea" has long been used loosely as a synonym for "oxidised tea" in English writing, worsened by loose translation of Chinese terms, so a pack that calls an oolong "fermented" is using imprecise language. Oolong is oxidised; pu erh and dark tea are the categories that are actually fermented, a point the tea myths debunked guide returns to.

How it changes the cup, and the brew

The practical payoff is that oxidation level tells you how to treat the tea. Lighter oolongs (around 10 to 30%) keep more green-tea catechins and floral aromatics; they want cooler water at 85 to 90C and short steeps, and reward gongfu brewing with eight to ten quick infusions from the same leaf. Pushed with boiling water they turn bitter and lose their florals. Darker oolongs (40 to 70%) have converted more of those catechins into theaflavins, the compounds that define black tea character, and gained roast led caramel and mineral notes; they want hotter water at 95 to 100C and longer, firmer handling, with five to seven gongfu infusions. Almost every "this oolong tasted harsh" complaint traces back to brewing a light one as if it were dark. In the body, the differences are minor and not worth chasing: light oolongs are a little richer in catechins, dark ones in theaflavins, but all of them are ordinary true tea, caffeine and polyphenols, and no oxidation level turns oolong into a fat burner, whatever the marketing aimed at this category claims.

Oolong oxidation at a glance

Range	Style example	Cup character
10 to 25%	Modern Tieguanyin, Wenshan Baozhong	Light, floral, pale yellow-green; closer to green tea
25 to 40%	Tung Ting, high-mountain Taiwanese	Balanced, honey-floral, slightly buttery
40 to 50%	Modern Dong Ding	Toasty, honey, deeper body
50 to 70%	Wuyi rock (Da Hong Pao, Shui Xian, Rou Gui)	Mineral, dark fruit, roasted; closer to black tea

Range	Style example	Cup character
How achieved	Bruising leaf edges, controlled wilting, then heating	Slow enzymatic browning, halted at target level
Misconception	Oxidation is not fermentation	No microbes; this is plant-enzyme chemistry

Treat oxidation as the master key to oolong: ask where on the range a tea sits, expect floral and fresh at the light end and fruity, roasted and full at the dark end, brew light oolongs cool and short and dark ones hot and longer, and ignore any claim that a particular level has special powers. Get that one idea straight and the confusing world of oolong names becomes navigable. The companion oolong tea, oolong roast levels and Tieguanyin guides build on it, and you can source oolong from the brand directory or the full tea shop.

Day-to-day teas that sit alongside this one: English Breakfast, Earl Grey, green tea, loose leaf tea, Darjeeling, oolong, and herbal tea. Browse the full tea range; light or dark, any oolong order above £35 travels free in the UK.

FROM THE CURATOR

teas · Oxidation, not the name on the packet, tells you what's in the cup. Ask where on the green-to-dark spectrum a tea sits.

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