

What is matcha ?!

Matcha is a superfood with flavor, functionality and culture

Matcha tea is now a global boom. Matcha is a finely powdered green tea commonly used in chanoyu (tea ceremony). Matcha has an elegant aroma which, in concert with strong umami and sweetness balanced with pleasant astringency, creates perfect harmony. Matcha is dissolved in hot water, and all of the tea's beneficial nutrients can be absorbed by the body, perfect for drawing out the flavors of Japanese confectionery and cuisine. The matcha market is expanding beyond original drinks to the food market.



Matcha is principally uesd in the Japanese tea ceremony (chanoyu).

Characteristics of shaded tea (matcha)

The young tea leaves are shaded from direct sunlight. Harvested shoots are immediately steamed then turned into tencha by drying without rolling, and finally ground in a stone mill. The new shoots that the plant produces under shade develop a deep green color, establish an enriched umami taste, and have a unique aroma. Leaves of these plants have increased chlorophyll and amino acid content with lower levels of catechins.



Tea plants are shaded with black netting attached to trellises from the time the first flush starts to appear.

A finely powdered tea made from tencha, is grown in the shade before processing

Characteristics of matcha marketed in Japan and other countries

By shading the new shoots, chlorophyll content increases, and the [a] value, which is an indicator of red and green in the Munsell color system, decreases. This means that even in commercially available matcha, the [a] value decreases as the price of matcha increases. In addition, the content of theanine, a kind of amino acid, is also increased by shading. Generally, the higher the theanine content, the higher the price and quality. The theanine content of high-grade matcha on the market is often 1-2% (or more) higher than low-grade matcha. High-grade matcha has a deep-green color, a high theanine and arginine content, and a low catechin content, so its health benefits will be excellent.



Price and [a] value of matcha tea sold in Japan and other countries



Theanine contnt of matcha tea sold in Japan and other countries

Benefit of matcha against stress



Modern life can cause stress in people, and the accumulation of stress is strongly linked to various diseases. Intervention of stressinduced alterations with dietary supplements is a potential therapeutic strategy for a healthy life. Reducing stress with matcha may become a new health-giving strategy for achieving good daily life.



The power of theanine in matcha

Theanine exhibits an excellent stress-reducing effect on mice and humans. However, the effect of theanine is antagonized by caffeine and epigallocatechin gallate (EGCG), which are two major components of green tea. In contrast, the stress-reducing effect of theanine is enhanced by arginine, which is the second most abundant amino acid in Japanese matcha. An effective stress-reducing outcome is only possible when the molar ratio of (caffeine (C) + EGCG (E)) / (theanine (T) + arginine (A)) is 2 or less. Matcha with a CE/TA ratio of 2 or less is high-grade matcha, and if the ratio is greater than 2, it is a low-grade matcha in terms of reducing stress.



Stress reduction by high-grade matcha

As a marker of stress, salivary α -amylase activity (sAA) was measured. The basal level of sAA before matcha intake was not different between the participants of high-grade and low-grade matcha groups. The participants drank matcha (3 g/500 mL water) for a week. The level of sAA after matcha intake was significantly lowered in the high-grade matcha group. Similarly, when eating cookies containing matcha (4.5 g/ 3 pieces), sAA was significantly reduced in the high-grade matcha group. Both drinking high-grade matcha or eating cookies with it reduced stress. On the other hand, there was no change in stress in the low-grade matcha group.



The stress-reducing effect of matcha marketed in Japan and other countries was assessed. When people ingested 3 g of these matcha per day, a stress-reducing effect was expected. About half of matcha sold in Japan is expected to reduce stress versus only one brand of matcha marketed in other countries. Almost all matcha brands in other countries had low amounts of theanine and arginine and high amounts of caffeine and EGCG. Matcha is essentially rich in theanine and poor in catechin, but not all marketed matcha satisfies these two conditions.





If you want to relieve stress with matcha, a high-grade matcha should be selected (CE/TA ≤ 2,0).

What is Stress?





Benefit of Matcha against Stress

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Matcha Marketed in Japan and Other Countries



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University of Shizuoka

Stress

University of Shizuoka

The Classification of Tea

There are guite a lot of tea made in the world, but it is largely classified according to the degree of oxidization. Among them, Japanese green tea is non oxidized, and is steamed tea which is a distinctive tea in the world different from pan fired green tea in China





Green tea ≓ Black tea Green tea Black tea Catechins \Rightarrow Theaflavins, Thearubigins Chlorophyll \Rightarrow Pheophytin Vitamine C \Rightarrow Nothing (Oxide, Hydrolyzate) Fresh, Grassy \Rightarrow like frowerly or fruity

The Classification of Tea in Japan



a green note.

Excellent Character of Japanese Green Tea

- 🛧 Have a long history 🛛 🛧 Tea look a needle
- ★ Color is green ★ Superior cultivar
- ★ Culturally rich
- 🛧 Beautiful tea field
- ★ High technology
- 🛧 Umami is strong
- ★ V.C content is high
- ★ Good for the body



Hojicha

This is lower grade tea, made from Bancha by roasting at about 200°C for a few minutes.



Genmaicha This is Bancha, in which poprice and Genmai are added, having good flavor.



Characteristics of Matcha

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stone mill. The new shoots that the plant produces under shade develop a deep green color, establish an enriched umami taste, and have a unique aroma. Leaves of these plants have increased chlorophyll and amino acid content with lower levels of catechins.



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Color characteristics of matcha



Market price of Matcha in Japan and oter countries(Yen/100g)

Price and Hue angle[h] value of matcha tea sold in Japan and other countries



Theanine contnt of matcha tea sold in Japan and other countries



A finely powdered tea made from tencha, is grown in the shade before processing



Matcha packages marketed in Japan and other countries

Market price of Matcha in Japan and other countries (Yen/100g)



Price and [a] value of matcha tea sold in Japan and other countries



EGCG/EGC ratio of matcha tea sold in Japan and other countries