



### Can make the various types of tea from the same leaves

Tea leaves	Green tea	Black tea
Catechines	Catechines ⇒	Theaflavins, Thearubigins
Chlorophyll	Chlorophyll ⇒	Pheophytin
Vitamine C	Vitamine C ⇒	Nothing(Oxide, Hydrolyzate)
Aroma	Fresh, Grassy ⇒	like flowerly or fruity

### Comparison of chemical contents of green tea and black tea infusion

The chemical contents of green tea and black tea infusion (Dry weight %)

	Green tea	Black tea
<b>Total Catechin</b>	<b>30-42</b>	<b>3-10</b>
<b>Theaflavin</b>	<b>0</b>	<b>2- 6</b>
Polyphenol	2	3
<b>Flavonol</b>	<b>8</b>	<b>24</b>
Theanine	3	3
Organic Acids	2	2
Caffeine	3-6	3-6
<b>Vitamine C</b>	<b>4</b>	<b>0</b>

### The expected benefits of tea in times of disaster

- ① Replenishing fluids
- ② Relieving stress
- ③ Warming the body
- ④ Replenishing vitamin C
- ⑤ Inspiring conversation

### Effect of theanine on relaxation

Time after intake: 10, 20, 30, 40, 50, 60 (min.)

Water intake

theanine intake

α<sub>1</sub>-waves

α<sub>2</sub>-waves

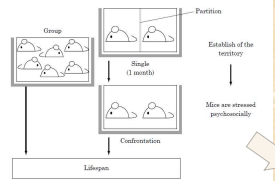
Relax

weak ← wave intensity → strong

Electroencephalographic measurement of alpha waves shows higher frequencies among human subjects taking theanine as compared to those taking water.

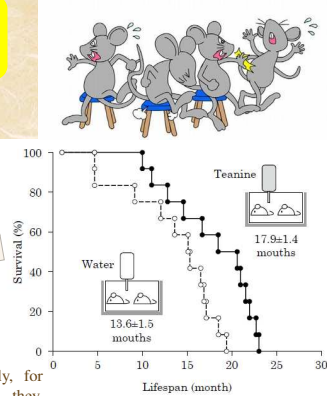


## Effect of Theanine on Psychosocial Stress



### Group and confrontational housing

After the two mice were housed separately, for one month, in a cage with a partition, they were housed confrontationally by removing the partition. Generally, group housing mice have long lifespan more than the stressed mice.

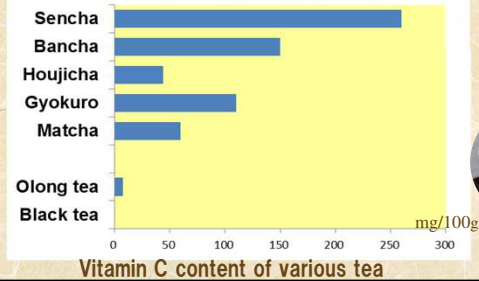


Prolonged lifespan of mice by theanine intake

## Green tea contains a high amount of vitamin C

### Eating tea can replace vegetables

The level of vitamin C which has been shown to prevent scurvy and the common cold, is decreased during the fermentation stage.



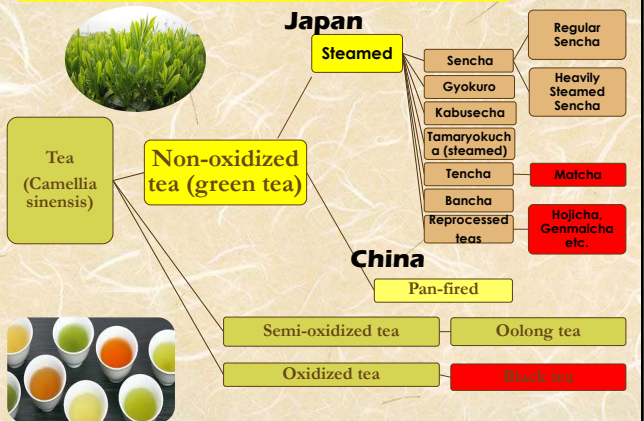
## Anti-bacterial action in polyphenol

### Theaflavins > Catechins

Comparison of minimum growth inhibiting concentration of tea polyphenol against bacteria (Hara, Y & Watanabe, M, 1999)

	<i>B.subtilis</i>	<i>B.sleurothermophilus</i>	<i>D.nigrificans</i>
	minimum growth inhibiting concentration(ppm)		
EGC	>800	300	>1000
EC	>800	800	>1000
EGCG	>800	200	>1000
ECG	>800	<100	>1000
TF1	>1000	200	>1000
TF2A	500	300	>1000
TF2B	450	300	>1000
TF3	400	200	>1000

## The Classification of Tea in the World



## How to Brew Japanese Green Tea ?

### Sencha (Gyokuro)

- Cool down by pouring the boiled water into tea cups.** (About 5 °C is cooled by this method)
- Place the tea leaves into the tea pot.** 6-10 g for 3-5 people
- Pour the cooled down water into the tea pot** Water temp. 70-90 °C Steeping time 60-120 sec.
- Serve equally into each tea cup until the final drop is poured.** Serving temp. 50-65 °C

## Peace of the world from one bowl

### How to whisk Matcha

- Measure 1.5-2g of Matcha with a Chashaku (Japanese tea spoon) and put it into the tea bowl. Measure roughly 2 spoonfuls with the Chashaku.
- Then pour 5-10ml of hot water into the bowl. Make sure to pour the water on the side and not straight over the Matcha. Pouring the water in this way helps to cool down the water.
- Use the tea whisk to mix the Matcha carefully. This makes the Matcha soft and prevents the formation of lumps.
- Pour 50-60ml of hot water (95°C) into the bowl.
- Stir the tea silently but swiftly back and forth with the tea whisk to mix the tea. Make sure that the tea whisk does not touch the bottom of the bowl in this process.
- When the Matcha has turned into a frothy liquid with small bubbles, lift the tea whisk and the preparation of Matcha is finished.