

# FEARLESS RECIPES

1 - YEAR - OLD CHEONG - PART 2

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## Fearless Recipes: 1 year old Cheong – Part 2

While it is true that everything we ingest has a world at the atomic level that influences flavors and effects on our health (both positive and negative), we are not expected to take our food to a laboratory before consuming it. However, this was my case four days after opening the Cheong: Santé.

It is important to emphasize that it was not because I got sick or created something toxic but rather to understand what had happened when I mixed fruits containing sugars and wild yeasts with tea, which has various chemical components in its molecular structure, whose influence I was unaware of at the time.

But how did I start to question whether creating a "simple syrup" or "jelly" could be harmful to health or even lethal?

Just as a video by [Johnnykyunghwo](#) motivated me to do it, another of his videos made me doubt the integrity of Cheong: Santé, as he explains that it is possible for a Cheong, which is not refrigerated, like Santé, to have a high probability of producing mold.

One might think, "Well, it's something simple to solve; just open it occasionally and check for the presence of spores or mold in the contents." However, this is impossible because cheong is carried out through anaerobic processes.

What is an anaerobic fermentation process, and why is it essential in fermentation processes like Cheong?

There are anaerobic and aerobic fermentation, which we could define and explain academically and in a complex way. Still, I am trying to explain them and make them understandable to almost anyone. So, we can summarize their definitions simply as follows:

**Anaerobic fermentation process:** The word "anaerobic" refers to a process without the presence of oxygen and is characterized by being a decomposition process. This occurs in parasites, bacteria, and yeasts, such as beer production.

**Aerobic fermentation process:** Unlike the previous one, the word "aerobic" refers to the presence of oxygen, as this fermentation process is not based on the decomposition of matter but on the production of energy. It mainly occurs in plants and animals, but certain organisms use it, such as the bacteria in the mother fungus of Kombucha.

Now that we know why the Cheong could not be opened, we can also understand that many factors influenced the decomposition process, such as the wild yeasts from the fruits.

There were so many questions and no answers. What can be done in a situation like this? Well, as the saying goes, "Asking leads to Rome," so that's what I did. I told the problem to whoever I encountered and then asked them what they suggested doing. Of course, only some were helpful; some even needed clarification. However, having more opinions provided a broader perspective, no matter how far apart they were.

Finally, during a virtual tea session, where members of the [Global Japanese Tea Association](#) shared time, chatting about any topic, I decided to tell the situation and ask questions.

The opinion of a specific member shed light on all my problems. Below are the notes I summarized at that time:

On Thursday, March 9, 2023, I attended a meeting of The Global Japanese Tea Association titled "Members Tea Gathering \*Online 76," in which the following question was asked (some words and question formulations may change a little, but the important thing is the idea):

"Just as Pur Eh tea undergoes a fermentation process in which the leaf is 'hydrated' and left in a warehouse to ferment before being presented, I wonder if any of you know what happens if a tea leaf is hydrated and left there for a while? I ask this question because the Cheong I am making, technically, one way or another, is hydrating the tea and leaving it there for one year, which catches my attention or concerns me a little because, in the Pur Eh process, a mask and goggles must be used due to the production of spores. Could this happen in the Cheong, considering it is in an environment mostly of sugar and fruit (which ends up being glucose)?"

Member Mark Milbocker responded: "Take into consideration that you added tea to the Cheong, which contains tannins, caffeine, and catechins, which are natural pesticides. So, if the state of the Cheong has remained anaerobic. These elements have been incorporated into the fermentation of the fruit, so it is not only a fermentation of natural yeasts and added sugar. This may also be why, as of the date 10-05-23, there has been no presence of carbon dioxide.

Remember that carbon dioxide = there is fermentation.

However, in Cheong, glucosylation occurs when the pulp has decomposed.

This conversation in "Members Tea Gathering \*Online 76" allowed me to see the light at the end of the tunnel; I just had to find something to support it. Here is where one might think there will be nothing to support it, but remember that no one ever invented hot water.

Doing a literature review, I came across the following research titled "[Improving the antibacterial activity against Staphylococcus aureus of composite sheets containing wasted tea leaves by roasting](#)," - conducted by researchers Tetsuya Takahashi, Yuji Aso, Wakako Kasai, and Tetsuo Kondo through The Japan Wood Research Society. The research highlights that teas like hojicha and black tea have high antibacterial properties that inhibit Staphylococcus aureus, a bacterium very present in our surroundings. Still, if it manages to invade our organism, it can become lethal, so it is not a simple bacterium.

The research shows the antibacterial properties of different teas.

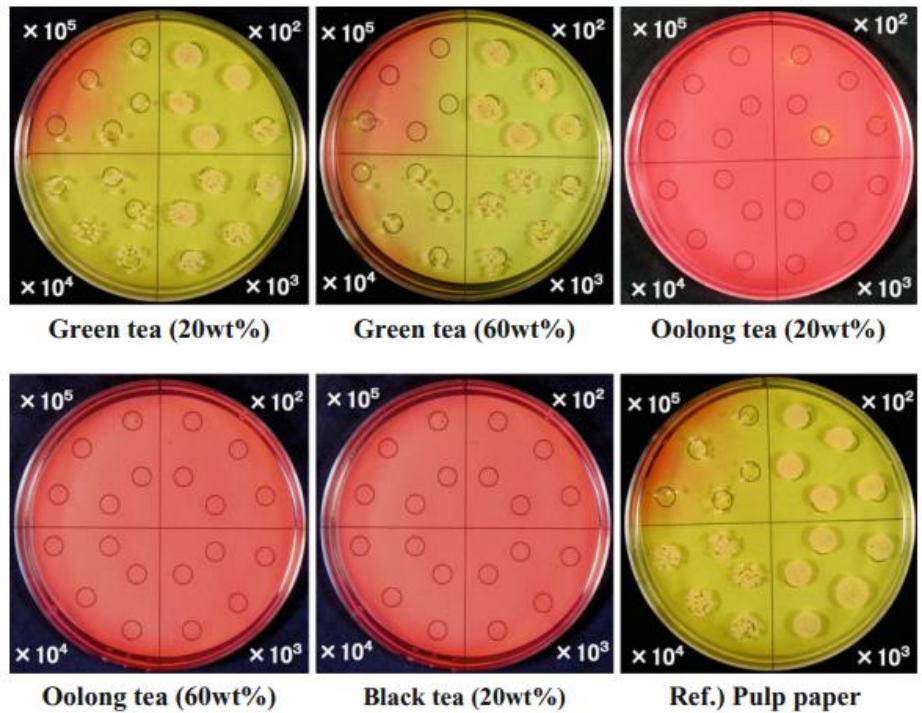
**Table 2.** Antibacterial properties of sheets containing wasted tea leaves against *Staphylococcus aureus*

Sample	Kinds of tea	Wasted tea leaves content (wt%)	Incubation time (h)	Antibacterial properties			
				Viable bacteria (CFU/ml)	Log C <sup>a</sup>	Bacteriostatic activity	Bactericidal activity
Initial	-	-	0	$1.0 \times 10^5$	5	-	-
Sheets containing wasted tea leaves	Green tea	20	18	$1.39 \times 10^7$	7.14	1.08	-2.14
		60	18	$5.36 \times 10^6$	6.73	1.49	-1.73
	Oolong tea	20	18	$1.60 \times 10^4$	4.20	5.97	0.8
		60	18	ND <sup>b</sup>	-	-	-
	Black tea	20	18	ND	-	-	-
		60	18	ND	-	-	-
Hojicha	20	18	ND	-	-	-	
	60	18	ND	-	-	-	
Pu-erh tea	20	18	ND	-	-	-	
	60	18	ND	-	-	-	
Pulp sheet	-	0	18	$1.64 \times 10^8$	8.22	-	-

<sup>a</sup>Viable bacteria number

<sup>b</sup>Not detected (<440)


**Fig. 1.** Antibacterial properties of sheets containing wasted tea leaves against *Staphylococcus aureus*



Obtained from: Improving the antibacterial activity against *Staphylococcus aureus* of composite sheets containing wasted tea leaves by roasting. Takahashi, T., Aso, Y., Kasai, W. et al.

This excerpt from the document shows that green tea and oolong tea present less bacterial growth than the control, but hojicha, Pur Eh, and black tea do not (N/D). The question is, would the same happen with Cheong?

The answer is yes. On January 8, 2024, a bacterial analysis was performed on the Cheong:




**CASA DE SALUD EL CARMEN, S.A.**  
**LABORATORIO CLINICO**  
 Barrio San Rafael 1era. Calle N° 115, Tegucigalpa, M.D.C.  
 Teléfono: 2239-3854, 2239-3855  
 E-mail: [hospitalelcarmen@yahoo.com](mailto:hospitalelcarmen@yahoo.com)

NOMBRE DEL PACIENTE: GUILLERMO GONZALES	
EDAD: AÑOS	FECHA: lunes, 08 de enero de 2024

**BACTERIOLOGIA**

TIPO DE MUESTRA	RESPUESTA A LOS ANTIMICROBIANOS
• JUGO	<ul style="list-style-type: none"> <li>• GENTAMICINA</li> <li>• CEFIXIMA</li> <li>• CEFTRIAXONA</li> <li>• PENICILINA</li> <li>• RIFAMPICINA</li> <li>• PIPERACILL/TAZOBACTAM</li> <li>• NITROFURANTOINA</li> <li>• AMPICILINA</li> <li>• AMIKACINA</li> <li>• LEVOFLOXACINA</li> <li>• CIPROFLOXACINA</li> <li>• NORFLOXACINA</li> <li>• CEFUROXIMA</li> <li>• AZITROMICINA</li> <li>• MEROPEREM</li> <li>• TRIMETROPIN/SUL</li> <li>• FOSFOMICINA</li> <li>• AMOXICILINA/ ACIDO CLAVULONICO</li> <li>• TETRACICLINA</li> <li>• CLINDAMICINA</li> <li>• STREPTOMICINA</li> <li>• IMEPENEM</li> </ul>
EXAMEN	
• CULTIVO	
KOH	
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CULTIVO	
NO SE AISLARON BACTERIAS	
CULTIVO POR HONGOS	
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OTROS	
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MICROBIÓLOGO ENCARGADO

Escaneado con CamScanner

This, in a way, reinforces the conclusions of researchers Tetsuya Takahashi, Yuji Aso, Wakako Kasai, and Tetsuo Kondo; even though the Cheong experiment has already ended, and its result was delicious and exciting, there are always certain unknowns that I hope to answer at some point.

1. Did the process create its transitional category in addition to anaerobic fermentation?
2. Could the process have been affected by the tea being rehydrated with different compounds when the Cheong was created?

And the one that intrigues me the most, as suggested by Mark Milbocker,

3. Is combining a fermentation process with tea possible to generate a symbiotic ecosystem among the agents that compose it, or is there a struggle between them?

But well, let's hope that time answers these questions, and perhaps by discovering the answers, we will encounter even more intriguing ones.

Ultimately, the only conclusion that will always remain constant is that tea is much more than a simple beverage.

Satoricha ~

## References

Takahashi, T., Aso, Y., Kasai, W. *et al.* Improving the antibacterial activity against *Staphylococcus aureus* of composite sheets containing wasted tea leaves by roasting. *J Wood Sci* **56**, 403–410 (2010). <https://doi.org/10.1007/s10086-010-1110-9>