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## Make Process and Health Benefits of Drink Kombucha Tea

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### ABSTRACT

**Background:** Consideration functional beverages in the world and one of the fastest growing food categories are considered. Functional fermented tea drinks non-dairy beverages kombucha one is functional. The raw material used to produce functional beverages kombucha tea, tea is sweetened with sugar. Kombucha functional drink tea fermenting tea and sugar with yeast is produced by symbiotic bacteria and has many health benefits. The main ingredients in these drinks are Glukvnyk acid, acetic acid, carbonic acid, oxalic acid, Batryk acid, ethanol, lactic acid, glucuronic acid, lactic acid, citric acid, malic acid, butyric acid, nucleic acids and vitamins families b and c. **Objective:** This study was designed to investigate the functional drink tea kombucha best production technique was implemented in 2013 in the province. In this project, two methods were used to study library and laboratory investigations. **Results:** Materials required for the production of functional drinks tea kombucha: water (2 liters), white sugar (160 grams), black tea or green tea (4 Teaspoon), mushrooms kombucha (1 number) and apple cider vinegar or white vinegar (2 tablespoons). **Conclusion:** Kombucha is a refreshing beverage obtained by the fermentation of sugared tea with a symbiotic culture of acetic bacteria and fungi, consumed for its beneficial effects on human health. Research conducted in Russia at the beginning of the century and testimony indicate that Kombucha can improve resistance against cancer, prevent cardiovascular diseases, promote digestive functions, stimulate the immune system, reduce inflammatory problems, and can have many other benefits. In this paper, we report on studies that shed more light on the properties of some constituents of Kombucha. The intensive research about the effects of tea on health provide a good starting point and are summarized to get a better understanding of the complex mechanisms that could be implicated in the physiological activity of both beverages.

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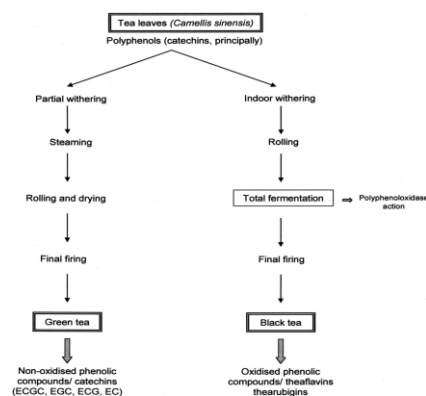
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## INTRODUCTION

Tea, a product made up from leaf and bud of the plant *Camellia sinensis*, is the second most consumed beverage in the world, well ahead of coffee, beer, wine and carbonated soft drinks (Costa *et al.*, 2002; Rietveld and Wiseman, 2003). Annually, about 5/3 million tons of tea in the world is produced. Population growth and the limitations of modern medicine caused people to seek new ways to improve their health. When civilization and the role of indigenous food and medicine study, we focused on the many foods and beverages because it has been assumed that the beneficial effects were used. Tea is one of the oldest beverages with beneficial medicinal properties. For almost five thousand years ago in China and tonic and stimulant effects of alcohol detoxification and excretion of poisons, improve circulation, reduce joint pain and increase resistance to disease and urine were used. Tea quickly finds its importance and its place in social ceremonies in China, Japan and the United Kingdom found. Today, after water, tea is the second most used drink. Since microorganisms are beneficial microorganisms found in the Kombucha are particularly high resistance to acidic conditions, they can be harmful microorganisms in the digestive tract replace, so one can drink kombucha products with probiotics and functional properties into account. Functional beverages, in addition to the basic nutritional properties, health properties also. In other words, these drinks are Mark slogans being considered practical class and even daily meals that are healthy, can be increased by adding a unique mix of pragmatic and functional Sign operate. Kombucha functional drink tea fermenting tea and sugar and symbiotic bacteria and yeasts is achieved. Hydrolysis of sucrose, glucose and fructose are found in tea by yeast glucose by yeast into ethanol and carbon dioxide is converted first. Next, ethanol is converted to acetic acid by Acetobacter. Kombucha ethanol

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concentration rarely reaches more than one percent, while the long incubation period can amount to 3% acetic acid also increases, but typically less than one percent of the amount of acetic acid (Sreeramulu *et al.*, 2000; Jayabalan *et al.*, 2008). Reference to nature and away from drugs and food industry IT and human interest factor to take into consideration is the drink. During the fermentation process and oxidation of fungi and yeast, sugar supply and the precious materials such as lactic acid, acetic, glucuronic Glvkvnyk and ethanol, glycerol, vitamins (B and C), amino acids, antibiotics and other substances to produce produce, so it 's actually a tiny biochemical factory (Jayabalan *et al.*, 2007; Stamets 2008; Teoh *et al.*, 2004). Kombucha a traditional fermented tea, tea Bagzshthay several thousand years in the East and in the West today, its use is quite common. The final product of the process as a slightly sweet and acidic beverage comprising sugar, organic acids, and constituents of tea, vitamins and minerals is similar to apple juice (Malbaša *et al.*, 2001; Dashi *et al.*, 2001). The concentration and composition of fungal metabolic supply of tea, sugar concentration and fermentation time depends. Green and black tea is the best substrate for the production of acid is acetic acid. Tea poly phenols (epinephrine Galvkatchyn gallate, catechin epinephrine, epinephrine Galvkatchyn, theophylline) and organic acid components in tea are useful kombucha that has widespread effects (Dufresne and Farnworth, 2000; Won and Lee, 2007). Various Benefits of Tea kombucha including AIDS treatment, hair loss, symptoms of diabetes, arthritis, prolonging life, lose weight, improve mental capacity and mental health, cancer treatment, decreased blood pressure, increased stability, eliminate acne, reduce arthritis pain, remove wrinkles, clean the gallbladder, enhances cell values T, relieving constipation and restoring gray hair to its original color has been claimed (Bhattacharya *et al.*, 2011; Dufresne and Farnworth, 2000). Figure 1 shows the principal differences between green and black tea processing (Cabera *et al.*, 2006).



**Fig. 1:** Principal differences between green and black tea processing and its influence on the final polyphenols content.

Tea is good for health According to chemical studies, tea leaves contains more than 300 nutritious components needed by human bodies, and they are categorized as below: Vitamins Tea leaves contain a lot of vitamins, both water soluble and oil soluble. Only 10 minutes steeping of tea leaves in water will dissolve in average at least 80% of vitamins. Amongst all the vitamins, vitamin B2 and C are the most important. Vitamin B2 is easily deficient in Chinese meals, shortage of it can disorder metabolism and cause ulcers to mouth and tongues. Vitamin C has multi-functions, it can cure scurvy, it can also strengthen our resistance to illness, and protect us against cancers. Minerals Tea leaves contain more than 20 kinds of minerals, i.e. potassium, calcium, magnesium, , copper, manganese, aluminum, zinc, natrium, phosphorus, fluorine, etc. Most of these minerals are essential to our bodies. Potassium regulates fluid levels within our body cells, fluorine strengthens our teeth and prevents dental caries, iron and copper play important role in production of blood, etc. Amino Acid Although the portion of amino acid in tea is little, they have many varieties and are much more fit to human needs, like thiamin, riboflavin, nicotinic acid and pantothenic acid, etc, all help elasticity of our blood vessels, prevent aging, and anti-radiation. Amino acid is also the main component of human protein, and protein is the basis of all living creatures. Tea can be used to cure and prevent illness, and is good for health; it is because tea contains the follow substance: Organic alkaline Tea consists of about 2 to 5% of alkaline, there are three kinds of alkaline in tea, namely caffeine, theanine and cocoanine. The values of these three organic compounds are very much the same. In general, they can refresh our nervous system and mind, increase efficiency, dilate blood vessels, strengthen our hearts, promote blood circulation of kidneys and help urination and perspiration, relax the smooth muscle, prevent asthma, chololithiasis, increase secretion of stomach acid and help digestion and arouse appetite. Flavanoid Flavanoid is also known as tannin acid, constitutes to about 20 to 30 % components of tea, there are more than 30 kinds of elements in flavanoid, most of them have medical values, they produce capillaries, prevent internal bleeding, hinder arteriosclerosis, decrease the risk of blood clotting, high blood compressure or any coronary heart diseases, it can also kill bacteria and protecting us from cancer and is anti-

radiation, etc. Vegetable oil 3% of tea is vegetable oil, it is a kind of compound for making cell membranes, it can create antibiotics in a very short time, it is anti-radiation, and can improve blood functions and is anti-blood clotting Tea contains so many elements good for human health and nutrition, tea drinking has a special meaning in our health and can cure hundreds of illnesses, there are in general traditionally 24 kinds of treatments of tea (Daryanavard Chonchenani and Baghari, 2014):

Lack of sleep

Calm the nerve

Brighten the eyes

Refreshing mind

Quench thirst

Balance body temperature

Quench summer heat

Anti-toxic

Help digestion

Improve eye sight

Remove oils

Smoothen breathing

Prevent constipation

Cure dysentery and diarrhoea

Prevent phlegm

Cure rheumatism

Strengthen teeth

Cure heart pain

Heal ulcer and tumor

Cure fatigue

Vitalizing

Prolong age

Help urination and perspiration

Others (Like root of tea plant can cure ulcers of mouth, burning the tea leaves can fear off mosquitoes).

Energy efficiency (energy output to input energy ratio) for rain fed farming tea production in Iran was calculated 0.25, showing the affective use of energy in the agro ecosystems tea production. Energy balance efficiency (production energy to consumption energy ratio) for rain fed farming tea production in Iran was calculated 2.58, showing the affective use of energy in the agro ecosystems tea production (Azarpour *et al.*, 2014). Chemical structure of some tea constituents showed that in figure 2 (Dufresne and Farnworth, 2000). Chemical structure of some Kombucha constituents in figure 3 (Dufresne and Farnworth, 2000). Kombucha Tea is called by several different names including Fungus japonicas, Fungo-Japan, Manchurian mushroom tea, Combucha fungus tea, Pichia fermentans, Cembuya orientalis, Tschambucco, Volga spring, Mo-gu, Champinon de longue vie, Teekwass, Kwassan, Kargasok tea and the champagne of life (Mayser *et al.*, 1995). The aim of this study is Production Technical for functional drink kombucha Tea at Home.

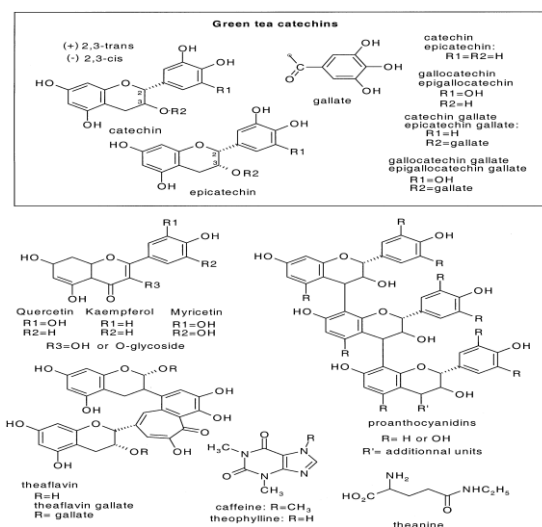
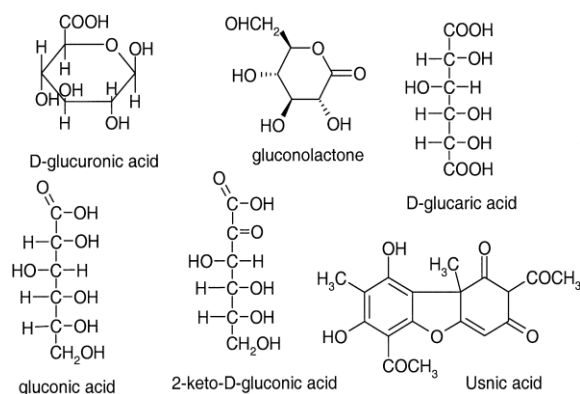


Fig. 2: Chemical structure of some tea constituents.



**Fig. 3:** Chemical structure of some Kombucha constituents.

#### Methodology:

Kombucha is a popular beverage among many traditional fermented foods across the world. In the literature, kombucha is also frequently called tea fungus, although there is actually no fungus involved in the fermentation. This beverage reportedly exerts a number of medicinal effects against metabolic disease, arthritis, psoriasis, constipation, indigestion, and hypertension. By virtue of the numerous health-promoting aspects reported and the easy and safe preparation of this beverage at home, it has gained popularity as other traditional beverages. Tea fungus is a symbiotic growth of acetic bacteria and yeast strains cultured in sugared black or green tea (Sreeramulu *et al.*, 2000). This study was designed to investigate the functional drink tea Kombucha best production technique was implemented in 2013 in the province. In this project, two methods were used to study library and laboratory investigations. Materials required for the production of functional drinks tea kombucha: water (2 liters), white sugar (160 grams), black tea or green tea (4 Teaspoon), mushrooms kombucha (1 number) and apple cider vinegar or white vinegar (2 tablespoons). Make process Kombucha Tea at home showed that in figure 4.



**Fig. 4:** Make process Kombucha Tea at home.

## RESULTS AND DISCUSSION

After providing the materials needed to produce functional drink tea kombucha (water, white sugar, tea, mushrooms and vinegar kombucha) 6-fold following steps must be performed sequentially.

**Step 1:** In a large pot or a dish of tea and then poured boiling water and then add the sugar and the sugar to dissolve the ingredients are stirred. It is at this stage no water, gas or mineral water can be purified because substances such as chlorine, aluminum sulfate, fluoride and other harmful fungi kombucha later. The amount of sugar consumed in this stage should be less those 160 grams, it is possible to reduce the amount of sugar in the later stages of the fungus Kombucha damage.

**Step 2:** Must Shyrynshdh tea leaves to settle for 10 minutes. At this point a dish (or glass) with a volume of approximately 3 liters (51 cups) are required. Remove the tea bags from the pot or in the original container. You can make a tea bowl (3 liters) of water smooth, and the rest will be added to a total volume of 2 liters, then you must allow the liquid to cool completely. Kombucha beverage container suitable for making container glass, porcelain or earthenware is glazed. Avoid the use of metal as a result of fermentation acids in contact with the

metal, actions and reactions arises. Kombuchayy flavored drink that is made from stainless steel dish flavored drinks kombucha be prepared in a glass container, is very different. If you use a plastic container, you have all kinds of high quality and resistant to acid. Vanyyl containers made of polyethylene and polypropylene plastics and cheap, causing there to be a change in the culture. To grow faster, mushrooms, anything 's better to have a larger surface. Thus, the low windows, large diameter and very suitable for a wide span.

Step 3: Vinegar should at this stage (for the first time) or the next time the liquid syrup Kombucha prepared, and then add the mushrooms gently in a bowl or jar is placed. Mushrooms will be floating on the tea, but if you start going down mushroom bottom, there will be no problem. The fungus has a smoother and perhaps a little less Rngtr, the smoother side up place. The important point is approximately 5 cm of the container must be empty. Kombucha should not be treated as metal mold, mildew and fungi can cause damage (even if no ring on your hand). It should be noted that the fungus kombucha should be light and must not be reproduced within shook up the mold.

Step 4: At this point, you need a lid with a cloth made from natural fibers, will be covered with stretched taut. This prevents insect penetration into the container.

Step 5: This step should be in place within the appropriate temperature (28-23°C) and away from direct light of the sun, to be kept for fermentation. If the temperature is between 14 degrees Celsius at night to 28 °C, per day, is a variable, not a problem. When the room temperature is 36 °C, for example, does not mean that the temperature of the drink as well. High temperatures cause more evaporation of the liquid. In some tropical areas, sometimes up to 25 percent during the fermentation liquid volume due to evaporation is low. In the early days of cultivation temperature is very important to drink to prevent rot. In the colder months of the year, you may want to grow up to ten days to get a healthy drink. Changes are necessary to place and season of the year. In normal conditions, the fermentation will be completed after 10.5 days (this time period is shorter in summer and higher temperatures). At this time the beverage is ready for consumption kombucha well as the fungal culture is achieved (the liquid should be consumed mushrooms). It is suggested not to choose too large culture dish because it is difficult to take mushrooms. It should be noted that the fungus naturally falls apart. If jelly-like material is attached to the mold, it can be washed with water. The fungus can also be used for reproducing. If you wish to re- grow mushroom in the future, we can mold in plastic bags on a glass plate with a slightly damp tea can be kept refrigerated. Does not break the mold problem and re- fermenting yeast can do. Slightly spicy and tastes like vinegar to drink when he is ready. When the mold is removed from the inside of the glass (this time a new layer is formed on the mold). In general, each time a new fungus on the original mold (the principle of equal division of one cell into two cells) come into being. The two layers are separated easily, but this was a problem can be thoroughly cleaned with a pair of scissors, can be separated into two layers.

Step 6: At this stage functional beverage kombucha tea is ready straight out of the bottle. We note that some of the glass must be empty. Wine glasses should be kept in the fridge, otherwise the operation will continue to ferment and become sour drink. It should be noted that flavored drinks should be tasteless or too sweet, because in this case the conversions have been done in the case of sugar, and it has become a useful acids. So, again, cover the lid and let it sit a day or two longer.

The most basic principles of herbal medicine, the human relationship with the plants that grow in his life, Herbal medicine, the plants are grown in anyone's life are most likely to treat his disease. Given the health benefits of drinking tea kombucha functional and cheap, and easy techniques to healthy living it is better to use this functional beverage. The most common drink in the food culture in China, Mongolia and Manchuria region has existed since ancient times the world consumption has gradually and research around the world on the health effects of drinking tea is kombucha, Indications Treatment prevention of disease is growing by the day. The drink, increasing longevity, strengthens the immune system, control cholesterol, prevent high blood pressure and even blood pressure treatment, control and treatment of coronary artery stenosis and the impact it will have on the immune system and helps prevent colon cancer and stomach Khstgyhay treatment of chronic mental illness Kombucha drink tea is very effective. In general it can be said that functional drinks, elixir of health and family easily and without any concern of the functional beverage use and the use of therapeutic effect and preventive Miracle:

1. Kombucha Chinese mushrooms and reduces wrinkles and brown spots on the hands and face, which removes moisture and enhance the vitality of your skin rashes and boils to fix vulnerabilities that.
2. Less than 3 months will cure fatty liver.
3. From the Heart prevents arteriosclerosis and high blood pressure cures.
4. To regulate blood sugar levels, causing a sudden drop in blood sugar in people with diabetes and the daily recommended dose given should be taken with urea for 100 days at reduces.
5. A liver and kidney disorder, liver increase and cures.
6. Lowers blood cholesterol and urea.
7. Regulates blood pressure.
8. It is recommended in renal diseases: bladder wipes and colitis and other gastrointestinal pain will heal.
9. Can cause atrophy and body weight control.

10. The development of AIDS and prevent some cancers.
11. Rafe constipation.
12. Mushroom Kombucha factor is effective in preventing strokes.
13. The software makes the arteries and increases blood flow.
14. Relieves insomnia.
15. Relieve muscular discomfort in the shoulders, neck and lumbar.
16. Helps in relieving asthmatic bronchitis and cough.
17. The disposal of helping children stolid temperament.
18. Nerves sensitive to pain and improves nervous breakdowns.
19. For the treatment of cataracts and other changes affecting the cornea and vision increases.
20. Works wonders on the scalp, prevents baldness and hair is thick and black (white hair).
21. AIDS and cancer cell growth stops.
22. Gout cures.
23. My paralysis. S. cures.
24. Rheumatism and arthritis cures.
25. Ladies of hot flashes during menopause to prevent.
26. Tingling and numbness of the fingers will fix it.
27. In the morning when you wake up in the more energetic feel to it.
28. A group of vitamins B1 and B12 vitamins, each of these has particular application to humans.
29. Forces will increase libido.
30. Mushroom kombucha because Glvkvyk acid and glucuronic those who live in high risk areas contaminated with chemical pesticides do not work and the impact of pesticides on them ineffective.
31. Kind of powerful antibiotics, antifungal compound kombucha it makes wastes and toxins that are excreted from the body. Increased during adolescence and early signs of aging appear later.

Kombucha functional tea beverage recommended dose as follows:

First week (seven days): Just one serving in the morning fasting, 15 minutes before breakfast, half a cup (cup), 50 mg (one-half to one cup of water to drink immediately). During the day the amount of water to make 4 to 8 cups.

Second week (eight to fourteen days): Just one serving in the morning fasting, 15 minutes before breakfast, a cup (cup) 100 mg (one-half to one cup of water to drink immediately) during the day drinking water intake to 4 to bring 8 cups.

The third week (fifteenth to the twenty-first day) : Just one serving in the morning fasting , 15 minutes before breakfast drink a glass of 150 mg (one-half to one cup of water to drink immediately) during the day drinking water intake to 4 to 8 get glasses.

Fourth week (day twenty- second to the twenty- eighth day) : two in the morning and evening meals , fasting in the morning 15 minutes before breakfast drink a glass of 150 mg (one-half to one cup of water to drink immediately) and 150 mg in the evening (immediately to eat a cup of water ) should be used. During the day the amount of water to make 4 to 8 cups.

Week Five (Rvzbyst ninth to end): three meals in the morning, afternoon and evening. Fasting morning 15 minutes before breakfast drink a glass of 150 mg (one-half to one cup of water to drink immediately), evenings before dinner 150 mg (one-half to one cup of water to drink immediately) and 150 mg in the evening (after a cup water meal) should be used. During the day the amount of water to make 4 to 8 cups. If you do not stretch the meals you can repeat the same two promises. Always check your blood pressure, such as excessive use can cause hypotension.

You have a period of three to three and a half months for functional drinks tea kombucha start. Continuous use, it will be a problem. But those who have normal or low blood pressure, you should consume to excess, do not drink it because they can cause low blood pressure. If you experience problems amounts to taking a few days off like the first week or second week more than the desire not to.

#### *Conclusion:*

Kombucha mushroom tea is a fermented tea beverage produced by fermenting sugared black or green tea with a kombucha culture known as a mushroom. Kombucha is a refreshing beverage obtained by the fermentation of sugared tea with a symbiotic culture of acetic bacteria and fungi, consumed for its beneficial effects on human health. Research conducted in Russia at the beginning of the century and testimony indicate that Kombucha can improve resistance against cancer, prevent cardiovascular diseases, promote digestive functions, stimulate the immune system, reduce inflammatory problems, and can have many other benefits. In this paper, we report on studies that shed more light on the properties of some constituents of Kombucha. The intensive research about the effects of tea on health provide a good starting point and are summarized to get a better understanding of the complex mechanisms that could be implicated in the physiological activity of both beverages.

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