WORLD JOURNAL OF PHARMACEUTICAL RESEARCH
SJIF Impact Factor 8.074
Volume 7, Issue 18, 638-649. Review Article ISSN 2277–7105

TEA KINNAURI (THANG & NAMKEEN CHAI) AN AYURVEDIC PERSPECTIVE: A REVIEW

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Article Received on
07 Sept. 2018,

Revised on 28 Sept. 2018,
Accepted on 19 October 2018

DOI: 10.20959/wjpr201818-13619

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ABSTRACT

Introduction: Beverages have been an integral part of Indian societies and culture. People of Kinnaur district of Himachal Pradesh India have the ancient tradition of preparing beverages from black grapes, wild apricot, apples, barley, various herbs and tea (thang /green tea and namkeen chai /salty tea). Tea is the most widely consumed beverage after water in the world. Thang is prepared by boiling Camellia/Taxus /Acacia in water like decoction, whereas the Salty Tea (ccha chah local name) is prepared by adding powder of dry walnut kernel, black pepper, milk (optional), butter rarely ghee and salt in Thang. **Objectives:** Primary objective is to evaluate the health benefits of Tea Kinnauri (its ingredients) according to Ayurvedic literature and the secondary objective is to document the preparation of traditional tea. **Methods:** Data about the preparation of tea was collected by observation and discussion with the natives of Kinnaur district, whereas regarding health benefits various Ayurvedic literature, websites and research papers were taken as a source. **Results:** Various Ayurvedic literatures and research papers showed that the ingredients of Thang and Salty tea possess multifarious medicinal properties and nutrients as well.

KEYWORDS: Chah, Thang, Namkeen Chai, Ccha Chah.

INTRODUCTION

Tea is an aromatic beverage commonly prepared by pouring hot or boiling water over cured leaves of the Camellia sinensis (herb), which is the most widely consumed beverage after water in the world. There are many different types of tea like Assam tea, Darjeeling tea, Kangra tea, Shrilankan and Chinese tea. India is a second largest producer and exporter of tea in the world after China.[1] Different regions favor different varieties of tea according to their climate, tradition, culture, taste and use different flavoring agents with medicinal benefits such as different herbs, milk, salt, jaggary, sugar, butter, oil, black pepper and dry fruits. It may differ widely in preparation such as in Kinnaur, Tibet and various areas of Himalayan range where the hot beverage is commonly brewed with salt and butter.[2]

Kinnaur

Kinnaur is one of twelve administrative districts in the state of Himachal Pradesh, India. The district is divided in to three administrative areas Pooh, Kalpa, Nichar and has administrative headquarter of Kinnaur district at Reckong Peo. This is a mountainous area, ranging in altitude from 2,320 to 6,816 metres (7,612 to 22, 362).[3] It is located at Latitude -31º 34' 59.99''N Longitude-78º 24' 59.99''E and this district is sharing border with Uttarakhand state to the South and Tibet in East.[4] Most of Kinnaur enjoys a temperate climate due to its high elevation, with long winters from October to May and short summer.

History of tea

There are so many stories regarding this but according to Chinese legend, tea as a drink was first discovered in 2727 BC, when the emperor Shennong was purifying water in the shelter of a tea tree and several leaves blew in to the pot. As a result, the leaf of superb fragrance, colour and taste made the emperor rejoice. Tea soon became a daily drink in Chinese culture.[5] Tea originated in Southwest China where it was used as medicinal drink. It was popularized as a recreational drink during the Chinese Tang dynasty and tea drinking spread to other East Asian countries.[6] Portuguese priests and merchants introduced it to Europe during the 16th century. During 17th century, drinking tea became fashionable among Britons, who started large scale production and commercialization of the plant in India to bypass the Chinese monopoly.

Ayurveda

Decoctions and hot infusions are described under the Panchavidha Kashaya Kalpana (five primary medicinal preparations- juice, paste, decoction, cold infusion, hot infusion) in

Ayurvedic medicine and has been an integral part of its therapies for centuries. Boiling the herb in water for a definite period of time and reducing it to specific quantity is known as decoction/kashaya/kwath. Similarly in Kinnauri tea making we prepare decoction prior to adding other ingredients and Thang is sort of decoction which is base for salty tea. Literary meaning of kashaya or decoction: Ka=kaya/body, Sha=function, Ya=regulation or yantra, which brings about normalcy to the body by maintaining equilibrium of physiological factors by removing pathology.[7] Acharya Charaka was 1st to mention about Panchavidha Kashaya Kalpana naming shrit for kashaya[8] where as Acharya Sushruta mentioned as 6 kalpana including Ksheera Kalpana but in Sharangdhar Samhita method of preparation of kashaya is mentioned.[9] Acharya Harita has classified kashaya in to 7types depending on the quantum of reduction and the karma exhibited by that particular kwath.[10]

Tea Kinnauri

Kinnauris have the tradition of preparing beverages from black grapes, wild apricot, apples, barley, thang (green tea) and namkeen chah or ccha chah local name (salty tea) which is considered incredibly energetic and nutritive for health. Tea has been an integral part of their tradition and culture as a daily drink since long. A big container full of water is put to boil either with green tea leaves/tendrils or Taxus baccata or Acacia catechu bark for few minutes to hours till the desired colour appears known as Thang and this is consumed several times in a day with jaggery to quench their thirst and to get energy while working in their fields. To prepare Namkeen Chai, Thang is churned with powder of dry walnut kernel, black pepper, butter rarely ghee, salt and lastly adding small quantity of milk to it. This is usually consumed with roasted barley sattu as snacks adding jaggery and apricot oil. Salty tea is almost similar to Tibetan buttered salty tea.[11] In ancient times shepherds used to collect and bring these herbs (tea leaves, bark etc) in different forms like uh (flower) chah, shing (stem/tendrils) chah, sang (bark or heart wood) chah from nearby mountains while grazing their animals. In present scenario everything is easily available in the market, people are using various forms of Camellia sinensis apart from leaves and tendrils.

OBJECTIVES

Primary objective: Is to evaluate the health benefits of Tea Kinnauri (its ingredients) according to Ayurvedic literature and other research papers.

Secondary objective: Is to document the preparation of traditional tea (Thang and namkeen chai).

METHODS

Data about the preparation of tea was collected by observation and discussion with the natives of Kinnaur district, whereas regarding health benefits various Ayurvedic literature, websites and research papers were taken as a source.

OBSERVATIONS AND DISCUSSION

The ingredients for preparing traditional tea Thang is Camellia sinensis/ Taxus *baccata* /Acacia catchu and Namkeen chai is thang, powder of dry walnut kernel (Juglans *regia*), milk (optional), butter /ghee, salt and black pepper (Piper *nigrum*). Sattu of roasted barley (Hordeum *vulgare)* mixed with bitter apricot oil and Jaggery as snacks with tea.

Table. 1: Showing ingredients of Thang and Namkeen chai.

S. N.	Ingredients	For 5cup of Namkeen chai
1	Bark of Taxus/Aacacia/Camelia leaves or tendrils	5-6 grams bark
2	Butter	5grams
3	Walnut kernel powder	10grams
4	Salt	According to taste
5	Black pepper	According to taste
6	Milk	Half cup
7	Apricot oil (bitter)	5-10 ml to mix with sattu
8	Sattu as snacks served with salty tea	30-60gm

Procedure for preparing Thang and Namkeen Chai (ccha chah)

Boil water in a brass pot- add bark of taxus or acacia or camellia leaves/ tendrils whichever is available-simmer it for few minutes to hours-Thang is ready, which is used as base for namkeen chai and consumed several times in a day with jaggery to quench the thirst and gain energy too.

The preparation of namkeen chai begins with making of thang in a brass pot and pouring it in to wooden dongmo (blender) after straining it, in sufficient quantity to churn, adding powder of walnut kernel, salt, butter and black pepper, vortex it vigorously with the help of loosely packed wooden piston in dongmo manually for at least 2-3 minutes. Then the mixture is poured in earthen pot, small quantity of boiled milk added to it and served in special bowels (chanag and batig made of bronze) which is consumed 2-3 times a day. In its preparation quantity of ingredients and pots differs according to availability and economic status. Salt and black pepper powder are used very little or as per taste, butter one teaspoon for 5 bowels, two teaspoon of walnut kernel powder and milk half cup (optional). Sattu, jaggery and bitter apricot oil is usually served with namkeen chai.

Properties of the ingredients

1Taxus *buccata*: It has always held a special place in medicine and mythology. It has an antimitotic compound (anticancerous) in the bark isolated by Wani and his colleague in 1971 and named paclitaxel (taxol) the precursors of the chemotherapy drug.[12]

2 Camellia *sinensis:* Tea contains a number of constituents like caffine (1-5%), xanthines, theobromine and tannins including flavonoids, polyphenols, fats and vitamine-C. Its extract exhibits numerous properties such as antimutagenic, antitumour, antioxidant, anticoagulant, antiviral, blood pressure and cholesterol lowering activity.[13] It contains nearly 4000 bioactive compounds of which one third is contributed by polyphenols. These are either flavonoids or nonflavonoids but chemicals found in tea are mostly flavonoids. Tea catechins (flavonols) constitute up to 20-30% of dry weight of green tea and these are colourless, water soluble compounds imparting astringency and bitterness to tea infusion.

Shrivastava et al did a comparison of antioxidant metabolites (total phenols and total flavonoids) and activities of the Camellia used for daily tea making with Taxus bark. It was found that the antioxidant metabolites and activities in Taxus bark were less compared to the market tea (Camelia) but in Taxus baccata bark good amount of the total polyphenols (26.09 mg/100mg) were found which is comparable to the total polyphenols content of market tea (29.69mg/100mg).[14]

3 Acaccia *catchu*

It has a bitter and astringent taste, cool potency and best used herb for teeth disorders, skin disorders, obesity, diabetes, worm infestation, bleeding disorders, anemia, fever, ulcers and useful in pacifying kapha dosha.[15]

The phytoconstituents isolated from various parts of the plant include flavonoids, alkaloids, glycosides, tannins and sugars. Phytochemicals present in this plant is as below.[14]

Table. 2: table showing phytochemicals present in Acacia catchu.

S. N.	Phytochemicals	Plant part
1	Flavonoids (flavonols): catechin, (-) epicatchin, epigallocatchin,epicatchin gallate, epigallocatchin, catecutannic acid, quercetin, quercitrin etc.	Heart wood
2	Glycosides: poriferasterol, poriferasterol acylglucocides.	Bark
3	Tannins: gallic acid, phlobatannins.	Bark
4	Sugars: D- galactose, d- rhamnose, l-arabinose.	Bark

Pharmacological activity due to its phytoconstituents are antibacterial (Taxifolin), anticancer (Polyphenols), anti-diarrhoeal (Flavonoids), antifungal (flavonoids, tannin), Antimicrobial (Alkaloids, flavonses, glycosides, steroids, tannins), Antioxidant (Carbohydrates, steroids, alkaloids, tannins, flavons), Anti-secretory and antiulcer (Flavonoids, tannin), Hepatoprotective (Bioflavonoids, phenolic compounds), Hypoglycaemic (Flavonoids, alkaloids).[14,16]

4 Walnut

It has a sweet taste, nourishes and provides strength to body. It also pacifies the vata dosha.[17]

According to US department of Agriculture (USDA) National Nutrient Database, 1cup of unbranded, organic walnuts (30gm) contains: energy-200calories, carbohydrate-3.89g, sugar-1g, fiber-2g, protein-5g, fat-20g, calcium-20mg, iron-0.72mg, also good source of manganese, copper, magnesium, phosphorous, vitamin B6.[18] They are high in monosaturated, polyunsaturated fats (shown to decrease LDL, cholestrol and triglyceride level) and omega-3 fatty acids. They are also a good source of Protein. A study published in British Journal of Nutrition showed that the risk of coronary heart disease is 37% lower for those consuming nuts more than 4times per week, compared to those who never or rarely consumed nuts. Scientist published finding on small studies in 2013 which indicated that walnut oil can benefit endothelial function and whole walnuts can enhance the process of eliminating bad LDL cholesterol. Results of meta analysis published in 2009 suggested that a diet that is high in walnut is linked to improved lipid and cholesterol profiles.100grams of common walnut contains water 4.07g, energy 656 kcal, proteins 15.23g, total lipid 65.21g, fiber 6.7g, sugar 2.61g, calcium 98mg, iron 2.91mg, magnesium 158mg, phosphorus 346mg, potassium 441mg, sodium 2mg, zinc 3.09, vitamin C 1.3mg, niacin 1.125mg, vitamin A 20 IU, vitamin E (gamma tocopherol) 20.85 mg.[19]

5 Ghee

This offers a wide range of benefits, enhances memory, intellect, digestivefire, nourishes all the tissues of the body, increases immunity, pacifies vitiated vata and pitta dosh. It is a yogvahi-a catalyst that carries the medicinal properties of herbs in to all the tissue of the body.[20]

6 Butter

It enhances digestivefire and beneficial in patients of piles and facial palsy.[20]

7 Bitter apricot oil

The use of apricot kernels for human nutrition is limited because of their content of toxic, cyanogenic glycoside amygdalin (used in the treatment of cancer) and it is present in almond kernals reportedly at aout2-3% by weight.[21] Amygdalin content is very high (5.5g/100g) in bitter apricot and is not detected in sweet ones.[21] Kernals of the wild apricot contain a high concentration of HCN (200mg/100g), whereas domestic bitter apricots contain relatively low levels of HCN (11.7mg/100g). Excess consumption of apricot kernels (to produce over 1mg/L-CN in blood) may cause poisoning. The fatal dose of HCN has been reported as 0.5mg/g.[21]

8 Salt: It improves taste and digestion, acts as aphrodisiac, good for eyes, does not cause burning sensation and pacifies all vitiated three dosha.[22]

9 Jaggery: It increases haemoglobin level and nourishes all the tissues.[23] Jaggery does not increase kapha and helps to relieve constipation. It is high calorie sweetener and far complex than sugar (digested slower than sugar and releases energy slowly) made up of longer chains of sucrose. Therefore this provides energy for longer time and is useful for the body. It is known to produce heat, gives instant energy and contains all the vitamins and rich in important minerals. A good quality Gur contains >70%sucrose, less than 10% of glucose and fructose, <5% minerals and <3% moisture.

Table. 3: Showing composition and nutritional aspect of Jaggery.[24]

Composition	**Nutrients value per 100 gram**	
Sucrose – 50%	**Minerals**	**Vitamins**
Invert sugars – 20%	Calcium 40-100 mg	A - 3.8 mg
Moisture – 20%	Magnesium 70-90 mg	B1 - 0.01 mg
Other insoluble matter:	Potassium 1056 mg	B2 - 0.06 mg
Ash	Phosphorous 20-90 mg	B5 - 0.01 mg
Proteins – 280 mg/100gm	Sodium 19-30 mg	B6 - 0.01 mg
Bagasse fines	Iron 10-13mg	C - 7 mg
	Manganese 0.2-0.5 mg	D2 – 6.5 mg
	Zinc 0.2-0.4 mg	E – 111.30 mg
	Copper 0.1-0.9 mg	P – 7 mg
	Chloride 5.3 mg	

10 Milk: It has sweet taste, cold in potency, rejuvenating and ojas like properties.[25] Ojas is a refined substance the body produces from the most subtle level of proper digestion. It brings strength, immunity, happiness and contentment. Milk is rich in protein, carbohydrates, minerals, vitamins (A, D, E, C) and calcium.

Table showing composition of milk from different mammals in g/100gm milk.[26]

Table. 4: Showing composition of milk from different mammals.

S. No.	Species	Water	Proteins	Fat	Lactose	Ash
1	Cow	87.2	3.5	3.7	4.9	0.72
2	Goat	86.5	3.6	4.0	5.1	0.82

Table. 5: Showing different mineral contents in cow's milk.[26]

Minerals	Na	Mg	P	Cl	K	Ca	Fe	Cu	Zn	I
Content (ppm)	445	105	896	958	1500	1180	0.5	0.1	3.8	0.28

In general goat milk compared to cow milk is less rich in lactose (main carbohydrate of milk), fat and proteins but have similar mineral content. Proteins in milk are of great quality, contain all the essential amino acids, elements that our bodies can't produce. Milk proteins have roughly the same composition as the egg protein.

11 Black pepper: natiushanam It enhances the appetite, digestivefire, opens blocked channels, dries the secretions and pacifies kapha vata dosha.[27] Kaphvattajitam It is very useful in respiratory diseases and disorders where pain is associated.[28] It pacifies vitiated kaph, vata and has analgesic and antibacterial activity. Piperine has been found to increase the absorption of many drugs and shown bioavailability enhancing activity of many drugs and nutrients.[29] It has various therapeutic properties like analgesic, antipyretic, antidiarrhoeal, useful in cold, cough, dyspnoea and throat diseases due to its bioactive Piperine.[30]

12 Roasted Barley flour (sattu): Yav or barley has been described under the classes of corns and monocotyledons in diet classification and chapter regimen of diet as dry, cold, heavy, increases vata dosha and pacifies kapha dosha.[31] It pacifies kapha pita dosha and good for patients having ulcers and wounds.[32] Sattu nourishes the body immediately, increases vata dosh and dry in nature.[31] In 2nd century BC Acharya Charaka has mentioned decoction (kashayay), which brings about normalcy to the body by maintaining equilibrium of physiological factors by removing pathology. Similarly Thang (green tea) is a sort of

decoction, which is base for salty tea. Keeping in view of all the properties (antioxidants, vatapacifying and other health benefit) of ingredients of thang and salty tea we can say that this is a rejuvenating hot beverage especially for the people of high mountainous areas where vata dosha is dominant. It also nourishes, keeps them energetic and rehydrated during toiling in tough terrain fields in cold climatic conditions. Black pepper enhances the bioavailability of nutrients of other ingredients, gives warmth to the body and keeps cough and cold at bay. Intake of oil/ butter/ ghee pacifies the vitiated vata due to its snigdha guna and also enhances their immunity. Documentation of the traditional knowledge is the need of an hour, as everything is getting adulterated and people are inovating it according to their ease and knowingly or unknowingly sacrificing their actual properties. Fermented tea (camellia) is never used in tea Kinnouri but now a day's people are using it to save time.

CONCLUSION

Thang and Salty tea, both have immense importance in their (natives of Kinnaur) life as the constituents of their ingredients have been shown to possess multifarious medicinal properties and nutrients as well. This indigenously prepared tea contained all the properties which is extremely important for survival in such a cold and dry climatic conditions.

ACKNOWLEDGEMENT

The authors are grateful to the authors, editors of all those articles, journals and books from where literature for this article has been reviewed and discussed. We are also thankful to the natives of Kinnaur for their help especially in tea making process.

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