Product Specification - Kangra tea

1. Name

'Kangra tea'

2. Description of 'Kangra tea'

'Kangra tea' is a type of tea derived from the leaves, buds and tender stems of the Camellia sinensis species as cultivated in the Kangra valley (Himachal Pradesh, India).

In the context of this application, the Kangra valley should be understood as the area defined below.

'Kangra tea' leaves' main characteristics are:

- a multi-stemmed frame,
- narrow leaves.

'Kangra tea' is planted from seed stock raised in the Kangra valley and other selected varieties for the region.

'Kangra tea' has a distinctive nutty, winter green, woody floral aromas in its flavour profile. The 'Kangra teas' imparts a sweet aftertaste.

'Kangra tea' has light colour and high body in liquor.

'Kangra tea' is placed on the market in the form of green, oolong, white and orthodox black tea.

These teas are very suitable for preparation of premium quality teas green tea, white tea, oolong tea and orthodox black tea (Figure 1).



Figure 1. Picture showing different types of tea (green, white, oolong and orthodox black) prepared from 'Kangra tea' leaves.

The different grades of 'Kangra tea' are as follows:

- 'Kangra tea' of the orthodox black type:
  - SFTGFOP: Super Fine Tippy Golden Flowery Orange Pekoe
  - FTFGOP: Fine Tippy Flowery Golden Orange Pekoe
  - TGFOP: Tippy Flowery Orange Pekoe.
  - GFOP: Golden Flowery Orange Pekoe
  - GOF: Golden Orange Fannings
  - FOF: Flowery Orange Fannings

'OP' is a whole leaf grade further specified as per the speciality of the tea like 'FOP' will have a Flowery aroma.

'TGFOP' is a whole leaf grade with lots of golden tips. The golden tips are produced when careful plucking is done for delicate apical buds (unopened leaves) and carefully manufactured to give 'Tippy Golden Flowery Orange Pekoe' tea (TGFOP)

Fannings are lightweight teas and are described depending upon the appearance or the aroma like GOF or FOF respectively.

- 'Kangra tea' of the oolong type:

Oolong tea is prepared by partial enzyme inactivation of tender tea shoots.

- 'Kangra tea' of the white type:

White tea is prepared from apical buds of tea generally called silver tip tea.

- 'Kangra tea' of the green type:

  - Whole leaf tea: Lachha (LACHHA), Young Hyson (YH) and Fine Young Hyson (FYH)
  - Broken: Mongra (MONGRA), Mashdana (MASHDANA), Gun Powder (GP), Hyson (H) and Fine Hyson (FH)
  - Fanning: Soumee (SOUMEE), Twanky (TWANKY)
  - Dust: Dust (DUST)

Whole leaf grades are Fine Young Hyson made from delicately hand-plucked shoots.

Gun powder is not a broken grade but is the small ball-like mass of tea formed during rolling when few shoots agglomerate. This is then softly disentangled to give tea which is known as "gun powder".

Fannings are again lightweight teas.

Dust is teas that pass just above 20 No. mesh sized sieve.

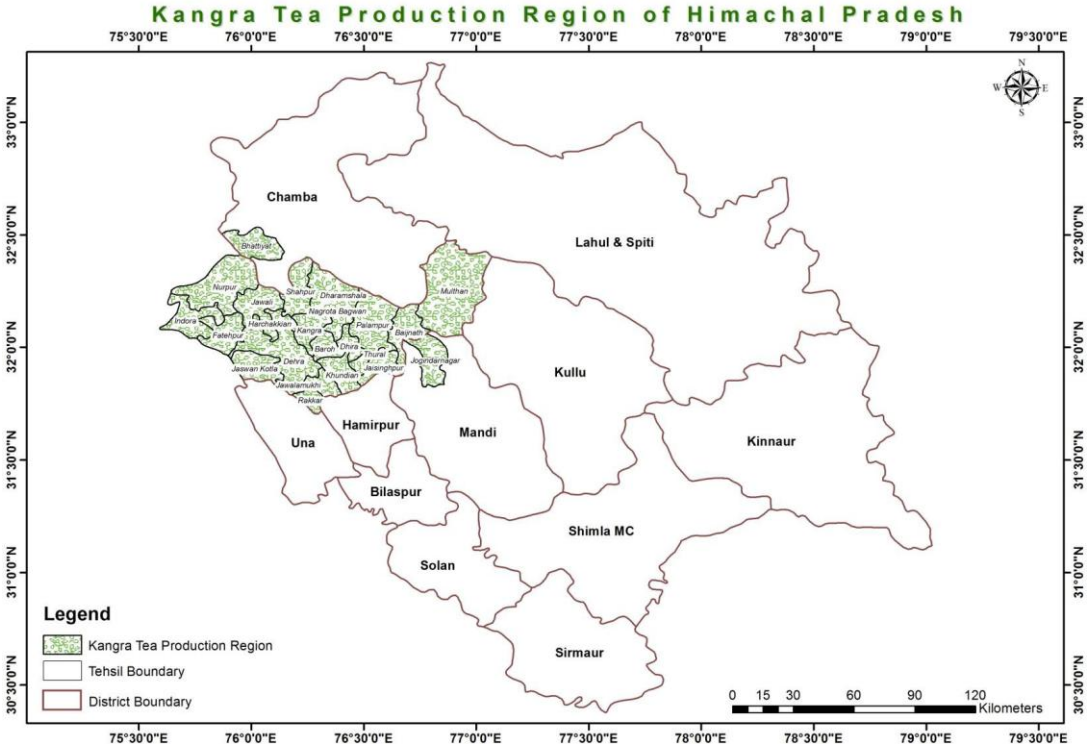
‘Kangra tea’ leaves contain up to 13 % catechins that are saved with high efficiency whole leaf-orthodox manufacture. They also contain up to 3 % caffeine and amino acids such as theanine, glutamine, and tryptophan.

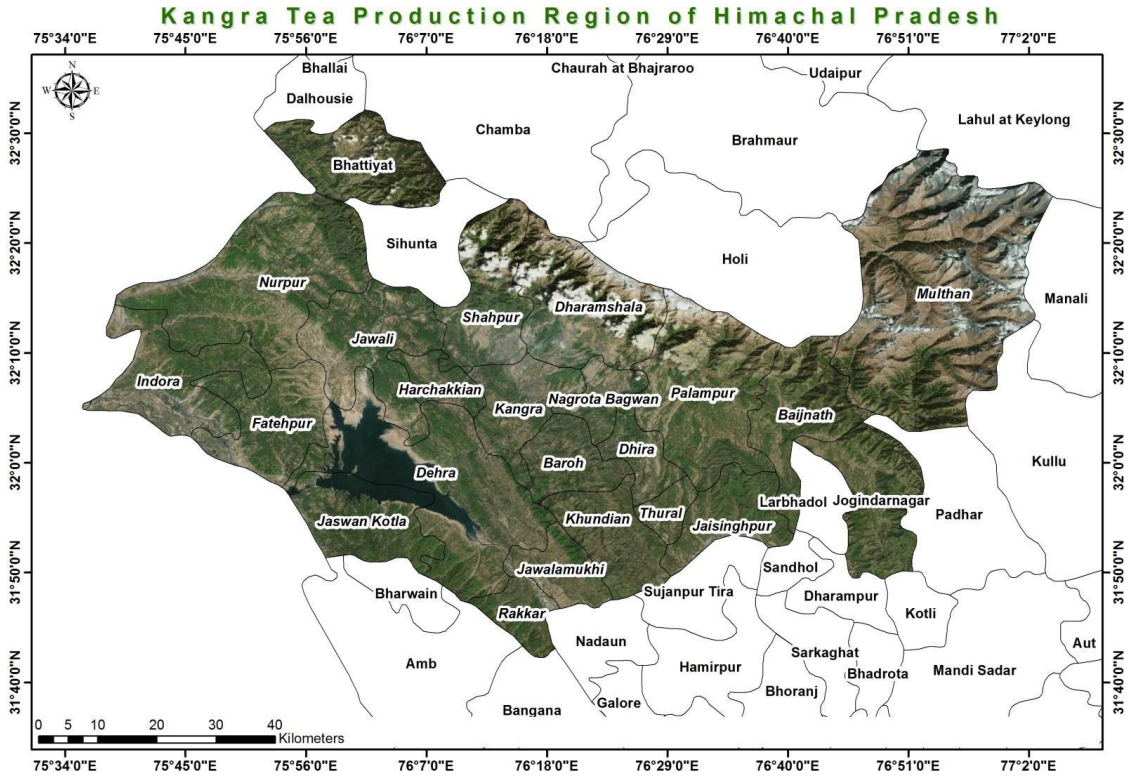
3. Geographical area

Kangra valley of Himachal Pradesh, India is situated in the lap of Western Himalayan Dhauladhar mountain range. The unique geo-climatic conditions, characteristic terrain and favourable soil conditions play a key role in creating a delightful and distinct cup of tea. Majority of tea estates are situated at a height of above 1200 meters from the mean sea level.

‘Kangra tea’ is produced in several areas located on the slopes of the Dhauladhar mountain ranges of the Western Himalayas. These areas are:
-the Kangra Valley
-the Jogindernagar area of Mandi District
-the Bhatiyat Tehsil of Chamba District

Districts:
A total number of 5900 tea growers representing an area under tea of 2312 hectare spread over four tehsils (or counties) of Palampur, Baijnath, Kangra, Dharmsala in the district of Kangra and one each in Jogindernagar & Bhatiyat in the districts of Mandi and Chamba respectively.





4. Product traceability and proof of product origin

Under the new guideline of Food Safety and Standards Authority of India (FSSAI) (www.fssai.gov.in), each manufacturer, retailer has to obtain the FSSAI certification otherwise they cannot manufacture or sell any food product including tea. This also requires the tea garden owners to register with the cooperative tea factories, who in turn have to certify from which tea garden the leaf is obtained.

Kangra region has four cooperative tea factories which take leaf from the registered growers. Apart from these cooperative tea factories, there are four private manufacturers which also are registered with the 'Kangra tea' Planters Association. All tea gardens in the region are registered either with the Cooperative tea factories or 'Kangra tea' Planters Association. Since, major production of 'Kangra tea' is only in Kangra Districts. Tea grown in other areas is not brought to this place.

The Kangra Valley Small Tea Planters Association and the four Kangra cooperative tea factories situated in four different locations of Kangra to cater to the needs of different tea growers of the region ensure that the tea shoots are plucked from the gardens registered with them. The plucked shoots from tea growers' gardens are transported by the vehicles owned by the cooperative tea factories to its premises, where it is processed under hygienic conditions for different tea manufacture.

(More details could be taken from the Kangra Valley Small Tea Planters Association and the Cooperative tea factories of the region.)

Certification work of Kangra tea will be done in the office of Kangra Valley Small Tea Planters Association (KVSTPA), who on the basis of quality of Kangra tea will allow the use of Kangra tea logo to its members. The testing of tea will be done by the

Institute of Himalayan Bio-Resource Technology (IHBT), Palampur, which will send the testing report to KVSTPA. Based on the testing report, the KVSTPA will decide whether to issue 'Kangra tea' logo or not. The KVSTPA will also ensure that the name of the tea garden will be written on tea packets, same. All 'Kangra tea' planters will become members of KVSTPA and same record will also be kept by Technical Officer (Tea), Department of Agriculture, Govt. of H.P.

5. Production method

There are different types of tea commonly manufactured in the region.

1. Green tea: It is non oxidized (fermented) tea prepared by compete enzyme inactivation
2. Orthodox black tea: It is prepared by allowing enzymatic oxidation of tea shoots during processing
3. Oolong tea: It is formed by partial enzyme inactivation
4. White tea: Prepared exclusively from apical buds of tea

Green tea:

The production of green tea is characterised by an initial heating treatment step, which inactivates enzyme polyphenol oxidase, responsible for conversion of the flavanols in the leaf to the reddish polyphenolic compounds, which imparts colour to orthodox black tea, the other important process is rolling which curls and twists the leaves.

Enzyme inactivation: Treating fresh tender tea shoots either by steam or with the help of hot air so as to inactivate the endogenous enzymes.

Rolling and Drying: As soon the tea leaves cooled down sufficiently it should be placed in the tea roller. Rolling should be carried out with slight pressure followed by drying at a temperature of 80-90 °C.

Orthodox black tea:

The manufacturing of orthodox black tea includes the following steps.

1. Withering
2. Rolling
3. Oxidation or earlier Fermentation
4. Drying

Withering: This step reduces the moisture content of leaves from 40-60%. At the same time, chemical changes occur in the leaves, which are an essential part of the development of the flavour of the tea. This operation is carried out by spreading the leaves on withering troughs to remove moisture. This step plays the most pivotal role in the manufacturing orthodox tea. This process normally takes about 12 to 16 hours.

Rolling: For manufacturing of orthodox black tea the withered leaves are loaded into tea roller. During rolling, slight pressure in applied to give proper shape to tea shoots.

Rolling is very important step since during these step different biochemical reactions occurs and new aroma, flavours and other non-volatiles complex compounds are formed.

Oolong tea:

Oolong tea processing lies between green and orthodox black tea. It is manufactured by sun- withering of freshly plucked tea shoots for partial inactivation of endogenous enzymes. The withered tea shoots are processed similar to orthodox tea manufacture. The withered tea shoots are processed by rolling with application of appropriate pressure. The rolled tea is dried by hot air followed by grading process.

White tea:

This tea is made selectively from apical buds (unopened leaves). For manufacturing of white tea, the apical buds are collected by hand picking. These buds were withered for few hours, rolled slightly without affecting or destroying the shape and texture of the bud and finally dried with hot air. On drying, this tea gives white appearance because of the presence of dried white colour bud pubescent hair.

6. Proof of link

The history of 'Kangra tea' dates back to 1849 during British era when Dr. Jameson, then superintendent of the Botanical Tea Gardens declared the region quite suitable for tea cultivation and later started the first commercial production in 1852. In recognition of its excellence, 'Kangra tea' has received gold and silver medals in 1886 and 1895 at international conventions held at London and Amsterdam.

The Kangra Valley is renowned to produce premium quality teas (green, orthodox black, white and oolong) with unique bouquet of sweet lingering after taste. The majority of tea plantation is hybrid of Camellia sinensis var. sinensis.

Quality Parameters of Kangra tea leaves and different types of teas prepared from them

'Kangra tea' has a distinctive flavour different from other teas of the world. 'Kangra tea' has higher content of pyrazines (2,5-dimethylpyrazine, ethylpyrazine, 2-ethyl-6-methylpyrazine) responsible for the nutty aroma, methyl salicylate and α- and β-ionones responsible for winter green, woody floral aromas in its flavour profile compared to other teas (Table 3). The higher ratio of these compounds is mainly due to synthesis of nitrogen containing compounds of tea in the Kangra region, mainly dependent on environmental factors.

'Kangra tea' has higher body and light colour in liquor compared to other orthodox teas of the world and imparts sweet aftertaste on palate. The ratio of epigallocatechin gallate in catechins profiles is higher in teas grown in Kangra, which is responsible for higher body in the liquor. Higher content of epigallocatechin gallate in teas is due to the

geographical positioning of teas.

Quality Parameters of Kangra tea leaves and different types of teas prepared from them

These teas contains:

Total phenolics content in range of 198-230 mg/gm (Table 1)

Total antioxidants in range of 196-223 mg/gm (Table 1)

Table 1. Showing total phenolic and antioxidant content in different teas

Tea	Total phenolics (mg/g GAE)	Antioxidant activity (mg/g TEAC)
Green Tea Leaves (GTL)	230.90±3.03[a]	223.36±0.78[a]
Green Tea (GT)	229.89±6.99[a]	218.73±1.15[b]
White Tea (WT)	212.12±2.42[c]	213.7±0.55[c]
Oolong Tea (OT)	219.79±2.64[b]	217.5±0.88[b]
Orthodox Black Tea (OBT)	198.58±4.62[d]	196.43±0.70[d]

Results are expressed as mg/g Gallic Acid Equivalent (GAE) for total phenolics and mg/g Trolox Equivalent Antioxidant Capacity (TEAC) for antioxidant activity by different teas.

HPLC profiling of all the Kangra tea infusions (Figure 2, table 2) showed presence of all major tea constituents as compared with green leaves. Green Tea Leaves (GTL), Green Tea (GT), White Tea (WT), OolongTtea (OT), Orthodox Black Tea (OBT).

Higher content of EGCG (peak 7) is clearly shown in HPLC profiles and tabulated data.

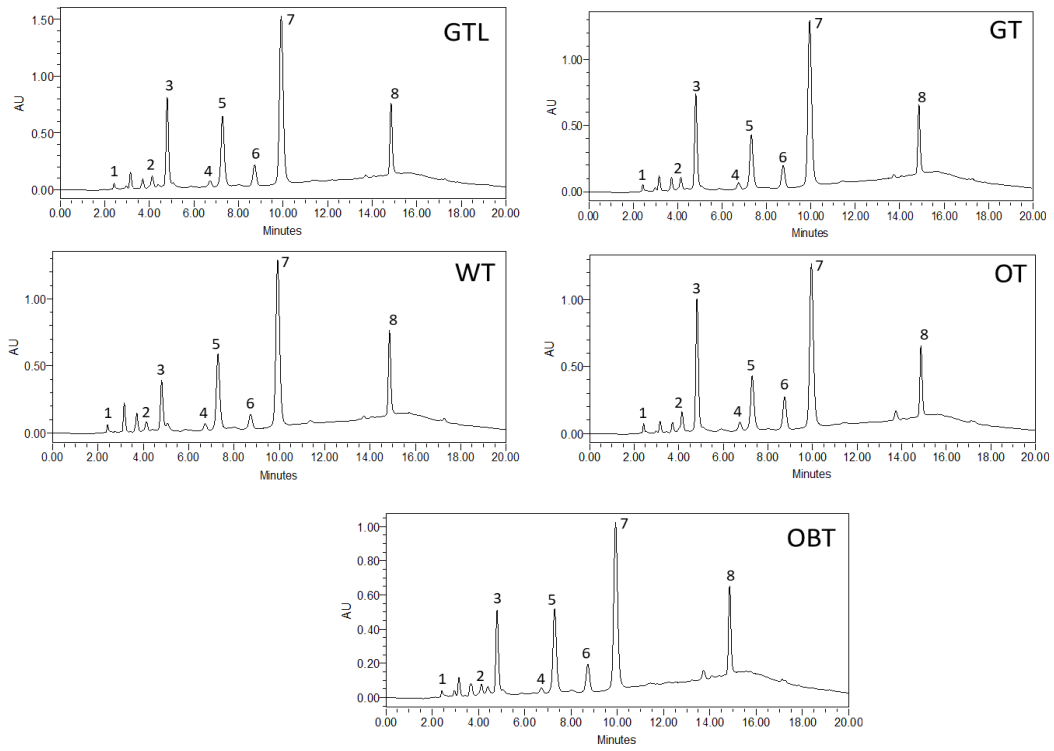


Figure 2. HPLC profiles of different Kangra teas. Peaks are labelled as 1. Theanine, 2. GC, 3. EGC, 4. Catechin, 5. Caffeine, 6. EC, 7. EGCG and 8. ECG. Green Tea Leaves (GTL), Green Tea (GT), White Tea (WT), Oolong Tea (OT), Orthodox Black Tea (OBT)

Table 2. Content of major constituents in different teas

Compound	**GTL (mg/gm)**	**GT (mg/gm)**	**WT (mg/gm)**	**OT (mg/gm)**	**OBT (mg/gm)**
Theanine	13.0	12.18	10.36	10.72	11.8
CAF	30.12	28.67	35.68	34.21	31.70
GC	-	2.63	0.19	1.94	0.97
EGC	24.37	33.76	6.22	26.38	19.54
CAT	-	1.15	0.64	1.11	0.86
EC	4.96	6.02	1.37	4.88	5.63
EGCG	80.1	79.57	45.36	79.85	54.18
ECG	15.25	17.48	17.36	18.84	16.90
Total	**167.5**	**143.93**	**74.72**	**136.20**	**101.39**

Green Tea Leaves (GTL), Green Tea (GT), White Tea (WT), Oolong Tea (OT), Orthodox Black Tea (OBT)

Table 3. Volatile flavour profile of orthodox black teas from Kangra (KT), South India (SI), Darjeeling (DT) and Uttrakhand (UT) areas of India

Compound	**RRI[a]**	**KT[b], [c]**	**SI[a], [c]**	**UT[a], [c]**	**DT**
Alcohols					
1-Pentanol	-	1.00	0.57	0.07	0.91
2-Pentenol	-	1.25	1.39	0.75	0.45
S-2-Methylpentan-3-ol	802	0.12	nd	nd	nd
3-Hexenol	859	2.70	8.91	3.60	1.83
trans-2-Hexenol	876	2.12	1.42	1.90	0.78
2-Methylbutanol	-	1.36	nd	0.09	nd
1-Heptanol	987	0.44	0.20	nd	nd
3-Octen-1-ol	999	0.54	0.59	0.22	0.64
2-Octen-1-ol	1088	0.10	0.05	nd	nd
6-Methyl-5-hepten-2-ol	1002	0.33	0.13	nd	0.12
Benzenemethanol	1052	0.11	0.43	0.54	nd
1-Octanol	1092	0.38	nd	0.19	nd
Linalool	1102	5.75	20.69	12.08	10.25
Hotrienol	1125	1.09	0.41	0.67	nd
α-Terpineol	1219	0.35	0.97	3.33	1.56
3,3-Dimethyl-2-pentanol	959	nd	nd	0.19	nd
3,4-Dimethylcyclohexanol	1131	0.65	0.14	0.09	nd
Phenylethanol	1136	1.24	0.38	1.90	0.48
1-Nonanol	1197	0.27	0.19	0.16	1.25
3-Nonenol	1178	nd	nd	0.04	nd
Nonen-4-ol	1115	nd	nd	0.13	nd
4-Terpineol	1202	nd	0.09	nd	nd
Nerol	1248	0.16	0.25	0.49	1.35
Geraniol	1274	13.54	5.35	19.76	15.43
Nerolidol	1291	0.25	0.86	0.66	nd
2,4-Di-*tert*-butylphenol	1434	7.50	2.09	3.90	nd
3,7-Dimethyl-1,5,7-octatriene-3-ol	1612	0.01	0.21	0.12	1.54
Phytol	2013	0.47	0.36	0.07	1.64
Eicosanol	2024	0.22	0.40	nd	nd
Epoxylinalool	1197	0.35	nd	1.38	nd
cis-Linalool oxide	1090	3.51	3.89	0.23	12.45
trans-Linalool oxide	1107	6.45	11.42	2.51	18.46
Jasmonol	1334	nd	0.06	nd	nd
		52.30	**61.31**	**55.24**	**69.14**
Aldehydes					
2-Methyl-2-butenal	-	0.11	0.07	nd	nd
E-2-Pentenal	-	0.19	0.10	0.09	nd
3-Methyl-2-butenal	-	0.21	nd	nd	nd
2,4-Pentadienal	807	4.17	1.83	1.03	1.34
2-Hexenal	863	6.04	2.17	3.69	2.06
Octanal	1022	nd	nd	0.04	nd
Heptanal	915	0.21	nd	0.16	nd
4-Heptenal	912	0.08	nd	0.64	nd
Benzaldehyde	975	1.99	3.82	1.67	1.82
E,*E*-2,4-Heptadienal	1029	0.77	0.11	0.67	nd
Nonanal	1127	0.32	0.19	0.32	nd
Benzeneacetaldehyde	1063	1.42	0.32	0.04	0.84
Safranal	1203	0.30	nd	0.56	nd
β-Cyclocitral	1243	0.38	0.23	0.23	nd
3,7-Dimethyl-2,6-octadienal	1291	nd	0.13	0.79	1.36

2,4-Decadienal	1344	0.13	nd	nd	nd
		15.29	**8.96**	**10.95**	**7.42**
Esters					
cis-3-Hexenyl acetate	1024	nd	0.22	1.66	nd
cis-3-Hexenyl butyrate	1208	nd	0.16	0.14	nd
Methyl salicylate	1214	5.86	7.59	3.33	8.46
cis-3-Hexenyl hexanoate	1406	0.10	0.36	0.41	nd
Hexyl hexanoate	1412	0.09	nd	0.11	nd
trans-2-Hexenyl caproate	1415	0.30	nd	0.17	0.12
cis-3-Hexenyl benzoate	1600	nd	nd	0.19	nd
Methyl palmitate	1960	nd	nd	0.15	0.15
Geranyl acetate	1892	nd	0.08	nd	nd
Butyl phthalate	1403	0.50	0.19	0.24	0.62
Isopropyl myristate	1857	0.17	0.21	0.07	nd
Methyl jasmonate	2342	nd	nd	nd	0.53
		7.03	**8.80**	**6.47**	**9.88**
Ketone					
2-Methyl-3-pentanone	-	0.09	0.05	nd	nd
4-Methyl-3-penten-2-one	802	0.17	0.06	0.09	nd
Heptan-2-one	902	0.29	nd	0.07	nd
1-(2-Furanyl)-ethanone	920	0.14	nd	nd	nd
2,2,6-Trimethyl cyclohexanone	1053	nd	nd	0.04	nd
3-Octen-2-one	1058	0.21	0.06	nd	nd
Acetophenone	1085	0.15	nd	0.06	nd
3,5-Octadien-2-one	1114	0.46	0.20	nd	nd
3,5,5-Trimethyl-2-cyclohexen-1-one	1144	nd	0.20	0.13	nd
R,*S*-5-Ethyl-6-methyl-3*E*-hepten-2-one	1163	0.20	0.12	nd	nd
3-Nonan-2-one	1160	0.09	nd	nd	nd
cis-Jasmone	1419	0.10	nd	0.23	nd
Cyclodecanone	1287	0.04	nd	nd	nd
Geranyl acetone	1475	0.02	nd	nd	nd
Neryl acetone	1478	0.31	0.22	nd	nd
β-Ionone	1507	0.38	0.36	0.25	0.45
(-)-5,6-Epoxy-5,6-dihydro-*β*-ionone	1511	0.49	nd	0.07	nd
6,10,14-Trimethyl-2-pentadecanone	1873	0.57	nd	2.33	nd
α-Ionone	1449	0.16	0.15	nd	nd
6-Methyl-5-hepten-2-one	1002	0.82	0.21	0.12	nd
		4.80	**1.64**	**3.40**	**0.45**
Nitrogenous					
Indolizine	1376	nd	0.26	nd	nd
2-Acetyl pyrrole	1086	0.81	nd	1.23	nd
Benzeneacetonitrile	1160	nd	0.21	nd	nd
3-Methoxy benzenamine	1066	nd	0.28	0.28	nd
Heptanenitrile	1078	0.35	nd	nd	nd
Ethylpyrazine	927	0.23	nd	0.33	nd
2,5-Dimethyl pyrimidine	924	0.17	nd	nd	nd
Methylpyrazine	829	0.19	nd	nd	nd
1-Ethyl-2-formyl pyrrole	1066	0.58	nd	nd	nd
		2.33	**0.75**	**1.85**	**nd**
Acids					
Hexanoic acid	1019	0.63	nd	nd	1.54
3-Hexenoic acid	1032	0.14	nd	nd	nd
Palmitic acid	1959	nd	nd	2.14	nd
Octadecanoic acid	1396	nd	nd	2.30	nd
Oleic acid	1795	2.32	0.43	0.75	0.08
Eicosanoic acid	2376	0.45	0.23	0.45	nd
Myristic acid	2013	0.19	nd	nd	0.12
Geranic acid	1383	nd	1.34	0.24	nd
Nonanoic acid	1300	0.28	nd	nd	nd
Decanoic acid	1392	0.21	nd	nd	nd
		4.22	**2.01**	**5.89**	**1.74**
Furan					
Furfural	837	0.09	0.06	0.12	nd

γ-Caprolactom	1069	0.45	nd	0.05	nd
2-Pentylfuran	1007	0.12	0.41	0.13	nd
Dihydroactinidiolide	1557	0.28	nd	0.23	nd
		0.95	**0.47**	**0.53**	**nd**
Hydrocarbons					
2-β-Pinene	1056	nd	0.08	nd	nd
2,3-Dimethyl-1-butene	-	0.13	0.07	nd	0.09
Theaspirane A	1300	nd	0.07	nd	nd
Myrecene	1007	0.16	nd	0.12	nd
Decane	1018	nd	nd	0.07	nd
α-Farnesene	1532	0.33	nd	0.18	nd
Propylcyclopropane	885	0.77	0.88	1.59	1.31
o-Xylene	879	0.12	0.07	1.32	nd
m-Xylene	902	0.10	0.94	2.31	1.26
3,5,5-Trimethyl-1-hexene	991	nd	0.11	nd	nd
1-Decene	1009	0.94	0.09	3.12	nd
3-Ethyl-2-methyl-1,3-hexadiene	1448	nd	0.07	nd	nd
2,3-Dimethoxyhexane	2642	nd	nd	nd	0.78
Pentadecane	1428	nd	0.07	0.41	nd
Undecane	1224	nd	0.06	0.39	nd
1-Tridecene	1419	4.67	1.02	1.67	2.31
Nonadecane	1731	0.13	0.17	0.65	1.25
Octadecane	1529	0.19	0.28	0.05	nd
1-Hexadecene	1632	0.79	1.41	2.62	3.25
1-Nonadecene	1826	1.55	1.23	0.99	nd
Tetracosane	2003	nd	0.10	0.27	nd
Pentacosane	1902	0.07	0.06	0.04	nd
Composition (%)		**9.93**	**6.78**	**15.80**	**10.25**
		99.90	**92.44**	**99.89**	**98.88**

[a]As ratio of peak area to that of internal standard
[b]RRI = Relative retention index on BP-20
[c]Percent composition is the mean of three replicates

The above-mentioned quality of the 'Kangra tea' is essentially attributable to its geographical origin in the foothills of Dhauladhar Himalayas of Kangra Valley. The unique geo-climatic conditions and the acidic soil condition with pH range 4-5.5 plays a key role in creating a delightful and distinct cup of tea.

The specific mouth feeling of the 'Kangra tea' depends on the ratio of epigallocatechin gallate in catechins which is high due to the geographical positioning of the Kangra region. The geographical positioning of the region is 32.1^{o}N 76.27^{o}E with elevation 900 to 1400m above the sea level. The gardens are in generally sloped with acidic pH 4-5.5 and rainfall 270 to 350 cm. All these factors affect the production of major and minor phytochemicals.

The development of the compounds responsible for a specific flavour and a sweet aftertaste is due to synthesis of nitrogen containing compounds of tea and depends on the elevation of the region 900 to 1400 metre above sea level with an annual rainfall of 270 to 350cm. These specific climatic conditions facilitate the development of special flavour and characteristic compounds.

The properties of 'Kangra tea' and especially the catechins content is maintained with high efficiency leaf-orthodox manufacture.

7. Control body

7.1. Inspection body:

Department of Science & Technology, Govt. of Himachal Pradesh has issued a notification on the Geographical Indications of Himachal Pradesh as per the notification HP Patent Information Centre has been declared as the nodal agency for filing the applications of possible GIs of Himachal Pradesh. As per the notification an advisory body on GI related issues has also been constituted. This advisory body will constitute the Inspection body.

In order to deal with GI related issues for Kangra tea following Inspection body has been constituted.

1.Co-ordinator, HP Patent Information Centre, State Council for Science, Technology & Environment, Shimla, H.P. Email: stc-hp@nic.in
2.Technical Officer, Tea, Department of Agriculture, Govt. of Himachal Pradesh. Email: totpalampur@yahoo.com
3.General Manager, District Industry Centre Kangra at Dharmshala. Email: gmdickgr@gmail.com
4.Director, Institute of Himalayan Bio-Resource Technology, Palampur. Email: director@ihbt.res.in
5.Representative of Tea Board of India, Palampur, H.P. Email: teaboardpalampurzo@gmail.com
6. Representative of Co-operative tea factory. Email: Palampurtea@yahoo.co.uk
7. President, Kangra Small Tea Planters Association. Email: kvstpa@gmail.com
8.Two Tea scientists one each from IHBT (Email:director@ihbt.res.in) and Agriculture University, Palampur, Kangra (Email:vc@hillagric.ac.in)

Technical officer, Tea, will be the Member Secretary of the Inspection Body

Scope of the work of inspection body would be as follows:

1- Issues related to quality control mark/ certification.
2- Legal Issues related to Geographical Indication
3- Random checking at the production\sale centers for the violation of GI. Act.
4- Awareness about GIs/ IPR Issues, Technology upgradation

Following three sub committees will undertake the above tasks on behalf of Inspection body.

7.2. Certification/Quality Control:

Technical Officer (Tea) will be the nodal officer for certification and quality control measures for Kangra tea Kangra Small Tea Planters Association, Palampur, The testing labs of Directorate of Agriculture/Institute of Himalayan Bio-Resource Technology (IHBT) Palampur/Himachal Pradesh Krishi Vishwavidyalaya, Palampur, could be used for the purpose.

8. Specific labelling rules

Labeling of grading is intended for final consumer, the grades will be written on Tea Packets, so that consumers can distinguish between different qualities of 'Kangra tea'.

The grades of 'Kangra tea', described under point 2, will be used on packaging along with 'Kangra tea' logo.

9. Applicant group

Kangra Valley Small Tea Planters Association, Palampur is an association of Kangra tea stakeholders.

H.P. Patent Information Centre, Himachal Pradesh Council for Science, Technology & Environment (HIMCOSTE), is the applicant on behalf of the growers and manufacturers of Kangra tea:

Address: Himachal Pradesh Patent Information Centre, Himachal Pradesh Council for Science, Technology & Environment B-34 SDA Complex, Kasumpti Shimla – 171009, Ph. 0177-2622489, 2622490.
Telefax: 0177-2620998. email: stc-hp@nic.in
Which is further supported by

Technical Officer (Tea), Department of Agriculture on behalf of the growers and manufacturers of Kangra Tea:
Address: Chai Bhawan, VPO - Miranda, Tehsil-Palampur, Distt. Kangra, H.P.
Email: totpalampur@yahoo.com

Himachal Pradesh Council for Science, Technology & Environment (HIMCOSTE), Technical Officer (Tea), Department of Agriculture and Kangra Valley Small Tea Planters Association together will deal with legal issues arising out of the infringement of Geographical Indications. Being the owner of the GI, HP Patent Information Centre can also initiate the infringement action if necessary.