



Unit 2 Topic 6

Quality grading of coffee. Processing of tea types - CTC - methods and equipment

Grading Coffee Beans



Grade 1: Specialty Grade Coffee Beans: no primary defects, 0-3 full defects, sorted with a maximum of 5% above and 5% below specified screen size or range of screen size, and exhibiting a distinct attribute in one or more of the following areas: taste, acidity, body, or aroma. Also must be free of cup faults and taints. Zero quakers allowed. Moisture content between 9-13%.

Grade 2: Premium Grade Coffee Beans: Same as Grade 1 except maximum of 3 quakers. 0-8 full defects.

Grade 3: Exchange Grade Coffee Beans: 50% above screen 15 and less than 5% below screen 15. Max of 5 quakers. Must be free from faults. 9-23 full defects.

Grade 4: Standard Grade Coffee Beans: 24-86 full defects.

Grade 5: Off Grade Coffee Beans: More than 86 full defects.

Tea is an evergreen woody perennial grown in many Asian countries including China, Japan, Java, Sumatra and India. The plant produces dark green, small shiny leaves with white blossom. In post harvest and manufacturing practices for tea, only mechanical and physical processes are allowed with natural fermentation. It can be manufactured by orthodox, CTC (crush, tear and curl) processing.

Processing of tea

Tea processing is the method in which the leaves from the tea plant (*Camellia sinensis* L) are transformed into dried leaves for brewing. Processing steps (Fig 25.1) are as follow:

1. The tea leaves should be harvested at proper time i.e., 2 leaves and bud. Plucking is done at an interval of 8-10 days (high crop period), 12-15 days (low crop period) and about 32-36 leaves can be plucked from single bush.

- Light plucking: plucking done above mother leaf and is also known as step up plucking. It also helps to increase height of bushes.
- Hand plucking: When the plucking is done below mother leaf.
- Level plucking: When plucking is done to the level, irrespective whether mother leaf or fresh leaf.

2. Withering is done to remove excess water from the leaves and by the end of this process, the leaves become pliable enough for rolling.



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3. After withering, the leaves are twisted and rolled with rolling machine or by hand to allow breaking of leaf cells. During rolling process, some of leaf juices and oils are released, that gives the tea its distinctive aroma and may aid in oxidation.
4. Processing is done either by CTC processing or orthodox method.
 - The CTC processing is done in machine consists of two cylindrical rollers (61 or 91 cm long and 20 cm in diameter) with stainless steel segment with fine tooth like sharp ridges (3-4 ridges/cm in lengthwise and 50-60 ridges over circumference). The speed of 70:700 and 100:1000 rpm have good effects. The crush, tear and curl (CTC) maceration takes only few minutes.
 - In orthodox processing, the rolling is done normally in 36” or 46” diameter rollers. The roller may be table or jacket moving, normally rotates at 45 rpm speed. Battens help in cutting the leaves in roller. With each turn of roller, the leaf caught between cone and roller jacket subjects to heavy pressure and this result in greater extraction of sap. The withered leaf is then charged into the jacket.
5. Oxidation/fermentation begins once the leaf membranes are broken down enzymatically during the rolling process. It is an important stage in black tea processing. It is a chemical process where oxygen is absorbed and the leaves turn progressively darker. The tannins are released/transformed during this process. During this stage, the most important properties of tea are produced.
6. After oxidation, the leaves are dried evenly and thoroughly without burning by using conventional drying, fluidized bed drying, air drying or baking. Drying of leaves stop the oxidation process. The main objective of drying is to arrest fermentation and to remove moisture and produce good quality tea.
7. Curing/ageing: Curing is not required for all types of teas. Additional aging, secondary-fermentation or baking are curing processes to rich their drinking potential.



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* For different types of teas the extent of oxidation is 5-40% for light oolong tea, 60-70% for darker oolong tea and 100% for black tea. During fermentation, low temperature (20⁰C) and high humidity (95%) are desirable.

Characteristics of tea

Appearance and colour	Dried tea should be black.
Strength	Proper twist, green in appearance, All desired characteristics should be there.
Briskness	Tickling sensation in salivary glands.
Flavour	Tea produced in high elevations is having good flavour.
Infusion	Infused leaves should also be twisted



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Grading of tea

Leaf grade	T,G,F,B,O,P
Broken grade	BOP
Dust grade	Special dust

TGFBOP: Tippy Golden, Flowering, Broken, Orange, Pikoe

Flowering Pikoe, Pikoe, Broken Pikoe Orange, Broken Pikoe, Pikoe Dust, Red Dust, Super Fine Dust are the important grades of tea.