

INDONESIAN JASMINE TEA

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The manufacture of the Indonesian jasmine tea is described. Jasmine tea accounts for 20% of the total production of tea in Indonesia catering for the domestic market. The jasmine tea is processed from the Indonesian green tea which is manufactured by the Chinese method.

The liquor of green tea is bitter and unpalatable, because it is processed from Assam jat flush. This green tea is reprocessed by mixing with jasmine flowers into jasmine tea in jasmine tea factories, most of them situated in Tegal, Central Java where Jasmine flowers are available. During this process the green tea undergoes noticeable changes in colour and liquor characteristics. The colour of the liquor turns light brown with a mellowed character and jasmine flower fragrance.

Indonesian jasmine tea is processed from green tea, which is a non-fermented form of tea. There are two distinct systems of processing green tea, the Chinese system and the Japanese system, and of these Indonesians adopt the former. The essential difference between the two systems of processing is the technique employed in inactivating the fermenting enzyme, polyphenol oxidase in the fresh leaf. The Chinese system employs the hot pan inactivation technique.

Indonesian green tea is very harsh and bitter compared with the Chinese and Japanese green teas. This is due to the characteristics of the jat of tea cultivated in Indonesia which is of the *assamica* type. The leaves of this variety are large and are high in polyphenols and low in amino acids compared with the *sinensis* variety grown in China and Japan and this accounts for the harshness and bitterness. Climate, age from pruning and cultural operations also have some influence on the polyphenol and amino acid contents (see Wickremasinghe, 1978).

Flush	Polyphenols (% Dry Weight)	Amino Acids (% Dry Weight)	
<i>sinensis</i>	10 - 17	6	R. L. Wickremasinghe
<i>assamica</i>	25 - 35	4	T. Tekeo (personal communication)

In China, from where the green tea processing technique spread to Indonesia, green teas of ordinary quality similar to the Indonesian teas are used for general quality scented teas. The popular material used for this purpose is the flower of *Jasminé*. In Indonesia two varieties of jasmine are used, the *Jasminum sambac* and *Jasminum officinale*.

The majority of the jasmine tea factories are situated in Central Java, mainly at the North coast city, because of the availability of jasmine flowers in this region. Many peasants in this part of the country have taken up to jasmine growing to subsidize their income. The climatic conditions in this region are also ideal for growing this crop.

The processing of green tea is as follows. The fresh flush from the field is stored in a cooler section of the factory or in a cooling device (like the withering trough with limited air flow) to retain the freshness of the flush till the manufacture commences. The first operation is called panning which is carried out in a rotary panner. This machine is composed of a rotating steel barrel encased in a furnace. This barrel is heated to about 95-100°C before the tea flush is fed. The leaf passes through the barrel in five minutes losing about 40% of its moisture content, i.e. the weight of the leaf is reduced by a third. During this period the enzyme in the leaf is inactivated and the leaf attains a suitable condition for rolling (see Advisory Leaflets, Tea Board, India, Indonesia; Wu, 1976; Ramasamy and Nanjiah, 1987).

The panned leaf is rolled in a moon roller for 10 minutes. The moon roller is somewhat similar to a black tea orthodox single action 26" roller with milder types of battens and without the cone. This operation has two main objectives. Firstly to produce a well twisted appearance to the leaf and secondly to distribute the expressed juice uniformly on the leaf surface. The roller capacity is about 40 kg panned leaf. The rolled leaf is pre-dried in an ECP drier for about 25-30 minutes at an inlet temperature of 130-135°C. The moisture content of the leaf would have been reduced to about 40%. After this operation the tea is dried in the rotary drier for about 60 minutes at about 60-70°C until the processed tea attains a moisture content of around 3.0%.

This crude green tea is sorted out into 4 grades, pecco (young leaf), Jikeng (coarse leaf), dust and stalk and sold to the jasmine tea factory.

This green tea undergoes a very careful scenting process at the jasmine tea factory. The various grades of teas bought from green tea factories are thoroughly bulked and once again dried in the rotary drier when they attain a black colour and are stored for a period of 7-10 days.

The mature jasmine flower buds are brought to the factory in the afternoon and kept fresh by spreading to a thickness of 1½-2 inches in the cooler section of the factory. The proportions of mixing flower to tea varies from 10-20% depending on the season and the requirement.

The tea is prepared for scenting by spreading it on the cemented floor of the factory to a thickness of about 10 inches and water added to it to obtain 30% moisture level. This operation is done carefully by pouring measured quantities of water with the aid of a watering can and turning the leaf with a fork. This operation is repeated a few times till the tea is uniformly moist and allowed to remain till evening about 7 O'clock.

Around 7 p.m. the tea bed is raked up into ridges and furrows. The 100% half opened flowers are filled in the furrows and later mixed and allowed to stay overnight. During the night occasional stirring is done to keep the bed from getting excessively warmed up. Sometimes a little water is also sprinkled on it. In the morning the mixture of tea and flower are fed through a rotary sifter to separate the spent flowers. The tea portion which will contain some flowers will be dried in the ECP drier for about 30-60 minutes at an inlet temperature of around 100-110° C. The dried jasmine tea is stored and attractively packeted for commercial exploitation. The packeting is done manually in double sheets of paper and cartons lined with aluminium foil.

The Chinese jasmine tea processing is somewhat different and the tea leaves are green in colour. The liquor is also light yellowish green in colour. The Indonesian jasmine tea is dark brown in colour.

The green tea liquors, generally, are light yellowish green or olive green in colour, but, the Indonesian jasmine tea liquor is like the black tea liquor, reddish brown, in colour with light intensity. The taste is somewhat milder compared with the crude green tea. The mellowing may be due to the principal flavanols, epicatechin, epigallocatechin, epicatechin gallate and epigallocatechin gallate decreasing during the prolonged drying process and the unoxidized polyphenolic compounds undergoing transformation to tasteless compounds by chemical reactions with some components in jasmine flower during the scenting process. These are some of Tei Yamanishi's findings from experiments done on green and jasmine teas.

Jasmine tea is the favourite beverage of the people of Central and East Java. The production of green tea for jasmine tea is mainly by the Small-Holders and the market is exclusively domestic. The production of jasmine tea in 1985 was only 20% of the total production while 80% was black tea mainly for export. The total production for 1985 was in the region of 132 million kilograms and the sweetened jasmine tea liquors are also sold in bottles and cartons. It is a pleasant, refreshing and economic drink.

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