

**Date of Issue: September 2003****Serial No: 15/03****MANUFACTURE OF TEA BY THE CTC PROCESS**

(This Advisory Circular replaces Circular Nos. T3, Serial No. 11/72 and T4, Serial No. 12/72)

A high standard of plucking is important for good CTC manufacture, not only to ensure teas of a satisfactory liquoring standard, but also to prevent the CTC rollers from becoming prematurely blunt by cutting into coarse leaf, stalk and woody material.

Withering

Green leaf is given a light wither, corresponding to about 28-32% outturn of made tea to withered leaf, in troughs. It is important that the wither should not get harder than an upper limit of 32% to ensure a satisfactory make, even if a drastic reduction in the duration of wither is necessary. The withered leaf is then passed over a withered leaf sifter with a No. 4 (or a larger mesh) to eliminate sand and small stones that may have got picked up accidentally in the field and in the weighing sheds.

Cutting

The leaf is fed into a pre-conditioner such as 15" (380 mm) rotorvane and then given 3 or more successive cuts in CTC machines arranged in series. It is advisable to use a bar magnet on the conveyor to the first CTC machine connected to remove iron particles, which might damage the rollers. Arrangement sketches, details of roller adjustments, rolling programmes etc., are given in other circulars.

Fermentation

The period of fermentation is generally shorter than with conventional manufacture, ranging from 1 hour 15 minutes to about 2 hours 10 minutes depending on the rate of fermentation of the leaf. Fermentation machines with a forced draught of air could be used, but it is also possible to ferment the leaf on tables, by reducing the spread to 25 mm - 32 mm (1 to 1¼ inches) in height. Fermented dhool can then be fed into the drier directly. It is however, advisable to pass it first through a ball-breaker as this operation minimizes the formation of agglomerates which inevitably find their way into the off grades.

Drying

The drying process is carried out in either a Fluid-Bed Drier (FBD) or in a conventional ECP drier. However, FBD is considered to be *sine quo non* for CTC manufacture. If FBD is used the inlet temperature should be maintained at 121 - 126°C and the weir end temperature at 88 - 93°C with a weir height of 8.9 - 10.2 cm. If ECP drier is used the period of drying should be 21 minutes with an inlet temperature of 93 - 99°C and exhaust temperature of 52 - 54°C.

Grading

The grading operation is simplified by the absence of a big bulk, and by the manufacture of only a limited number of grades. Generally, either a Vibro Screen or a Chota Sifter or a Trinick Sorter with mesh sizes of 10, 12, 16, 30 and 40 is used. When a Chota Sifter or a Vibro Screen is used, tea particles passing over the 12 mesh are crushed, resifted and classified in secondary grades. BP1 is taken through 12 and over the 16 mesh. What passes through 16 and over the 30 mesh is PF1 and through 30 and over 40 is PD. What passes through 40 mesh is D1.

Some variation is expected in the sieve size description of grades and even in sifting procedure according to trade requirements, but the procedure outlined here is that which is most commonly followed. Crushed teas, rejects from the winnower (if used for subsequent cleaning operations) and the electrostatic stalk extractor are used to form the off grades BP1, F1 and F2 and D2.

The trays in a Trinnick sorter should be fixed in an ascending order of perforation sizes (No. 30, 24, 16, 12) and grades separated as explained above. For example, BP1 is taken through No. 12. Trinnick sorters could be used with only 4 sizes of meshes fitted, if necessary.

Bright infusions with good liquoring colour and strength are necessary attributes of a good CTC tea, but the dry leaf appearance standard is not as important a factor as with orthodox.

AREAS SUITABLE FOR THE PRODUCTION OF CTC TEA IN SRI LANKA

Increasing popularity of the tea bag in Europe and the demand for quick brew teas have resulted in the formation of a very considerable market for cut/tear/curl (CTC) teas. A negligible proportion of this type of tea is manufactured in Sri Lanka and it has now become very necessary for us to take a serious view of this expanding market. Strong, coloury liquors are essential characteristics, but dry leaf appearance is not as important a sales factor as it is with teas of orthodox manufacture.

The requirements of this specialized market for CTC tea are, at the moment, supplied by India and East Africa. CTC tea production in India is based largely in the low elevational districts of Assam, Dooars and West Bengal in the North East, and in more limited quantities, from the plain tea producing areas of Kerala and Madras State in the South. Districts such as Darjeeling, Nilgiris and the Anamalais which produce flavoury teas in season, and high quality teas for most of the year retain almost exclusively the orthodox system of manufacture. East Africa, on the other hand, experiences no pronounced flavoury season as in the Uva and Dimbula-Dickoya districts of Ceylon, and produces mainly the CTC variety.

Looking into the factors which have demarcated CTC producing areas from districts producing orthodox black teas in other countries, it would seem that estates in the low and low-mid elevations of Sri Lanka would be those best suited for producing the type of CTC tea that would find its way into the tea bag. Rush and other off-season teas from high and upper-mid elevational teas could also be converted into CTC but these estates would then have to be geared for dual manufacture and the very best of these could even be placed in a disadvantages position, under prevailing market conditions, by not offering the trade an uninterrupted supply of a given line of manufacture.

The Tea Research Institute of Sri Lanka
Talawakelle

Copyright – The Tea Research Institute of Sri Lanka 2003

COPY RIGHT

All rights reserved. No part of this publication may be reproduced or transmitted in any form or by any means, electronic or mechanical, including photocopying, recording or information storage and retrieval, without permission in writing from the Director, The Tea Research Institute of Sri Lanka.