

PERMANENT

**EFFECT OF STANDARD OF LEAF AND
WITHERING PERCENTAGE ON THE BULK DENSITY OF
MADE TEA**

BY

Athula Gunaratne

A RESEARCH REPORT SUBMITTED FOR PARTIAL FULLFILEMENT OF THE
REQUIREMENT OF THE ADVANCED COURSE IN FOOD SCIENCE AND
TECHNOLOGY

FOR THE DEGREE OF BACHELOR OF SCIENCE IN AGRICULTURE.

FACULTY OF AGRICULTURE

EASTERN UNIVERSITY SRI LANKA

MAY 2002.



FAG161
Project Report
Library - EUSL

50231



APPROVED

T. Mahendran

DR (MRS) T. MAHENDRAN
(SUPERVISOR)
FACULTY OF AGRICULTURE
EASTERN UNIVERSITY
SRI LANKA.

DATE: 30/5/2002

T. Mahendran

DR (MRS) T. MAHENDRAN
HEAD/ DEPARTMENT OF AGRONOMY
FACULTY OF AGRICULTURE
EASTERN UNIVERSITY
SRI LANKA.

DATE: 30/5/2002
Dr. (Mrs) T. Mahendran
HEAD

Dept. of Agronomy
Faculty of Agriculture
Eastern University, Sri Lanka.

PROCESSED

ABSTRACT.

A study was conducted in the low country tea factory to find out the variation in bulk density; appearance & tasting characteristics of made tea with variation of standard of leaf and withering percentage. The following measurements are taken.

1. Standard of leaf.
2. Withering Percentage.
3. Weight of 1st Dhools, 2nd Dhools, 3rd dhools, 4th Dhools, & big bulk.
4. Bulk density.
5. Appearance and taste of made tea

Standard of leaf is much important in tea processing. Stalks contain more moisture than the leaves. Leaves and stalks lost moisture at different rates during withering. Tender leaves withered faster than coarser leaves. When the leaves are damaged, the cell constitutes being mixed with enzyme, pre-moisture penetration started, leaves, which are damaged also dried out during withering and cause loss of both appearance and potential liquoring quality.

Standard of leaf is measured under two criteria.

- 1 Good leaf - Immature undamaged leafs and buds.
2. Bad leaf † Immature bud & leaf damaged, and coarse leaf

The quality parameter of the made tea such as appearance, taste and bulk density decreased as the standard of leaf and withering percentage decreases. Here the withering percentage must be fixed within a specified range. Highly Increasing withering percentage also gives bad result.

CONTENTS

ABSTRACT	I
ACKNOWLEDGMENT	II
LIST OF TABLES	IV
LIST OF FIGURES	V
<u>1.0 INTRODUCTION</u>	<u>1</u>
<u>2.0 LITERATURE REVIEW</u>	<u>8</u>
<u>2.1 HISTORY OF TEA IN SRI LANKA</u>	<u>8</u>
<u>2.2 CULTIVATION OF TEA</u>	<u>10</u>
<u>2.3 COMPOSITION OF TEA</u>	<u>12</u>
<u>2.4 APPEARANCE OF PROCESSED TEA</u>	<u>14</u>
<u>2.4.1 COLOUR OF INFUSED LEAF</u>	<u>16</u>
<u>2.5. QUALITY</u>	<u>17</u>
<u>2.5.1 CATETHINS AND THEAFLAVINS</u>	<u>17</u>
<u>2.5.2 COLOUR AND STRENGTH</u>	<u>20</u>
<u>2.5.3 FLAVOUR</u>	<u>22</u>
<u>2.5.3.1CHEMICAL MECHANISM OF FLAVOUR DEVELOPMENT</u>	<u>25</u>

2.6. BIOCHEMISTRY AND MANUFACTURE	26
2.7 GROWTH OF THE TEA BUSH	28
2.7.1 PARAMETERS FOR CLONAL SELECTION	30
2.7.2 PLUCKING	32
2.7.3 WITHERING	34
2.7.4 ROLLING	37
2.7.5 FERMENTATION	38
2.7.6 FIRING	38
2.7.7 GRADING AND PACKING	40
2.8 TEA TASTING	42
3. MATERIALS AND METHODOLOGY	46
4. RESULTS AND DISCUSSION	48
5. CONCLUSSION	54
REFERENCE	55