EFFECT OF MOISTURE CONTENT OF MADE TEA ON THE GROWTH OF YEAST AND MOULD

A dissertation submitted to the
Faculty of Animal Science and Export Agriculture of
Uva Wellassa University
in partial fulfillment of the requirements for the award of the degree of
Bachelor of Science in Tea Technology and Value Addition

By
L.J.M.B.J. JAYASUNDARA

Faculty of Animal Science and Export Agriculture
Uva Wellassa University

2013

ABSTRACT

Moisture content is an important factor which determines the quality of made tea. Moisture content of tea is reduced to around 3% in the drying step, further gain of moisture occurs during transportation, storage and blending operations due to the hygroscopic nature of tea. Higher moisture content leads to microbial growth. Yeast and mould are the major microorganisms found in tea which affect the quality deterioration rather than bacteria. This study is to identify the effect of moisture content and particle size of black tea on yeast and mould growth. Dust, BOP and OPA grades were used for the study. Maximum absorptions of moisture by selected grades were analyzed. Moisture series were prepared for each tea grades from 6% to 14% by adding sterilized water. *Aspergillus niger* and *Saccharomyces spp.* were inoculated into another samples of selected tea grades. Known amount of contaminated tea was inoculated into prepared series of samples and kept for incubation. Initial moisture content and the yeast and mould counts were analyzed. Yeast and mould counts were analyzed in a periodical manner within seven days interval for one month duration. Moisture levels in all three grades were reached their equilibrium state after 3 weeks of storage. Moisture content and storage time were significantly affected on the yeast and mould growth while particle size was not significantly affected. Moisture content up to 10 % is not favorable for yeast and moulds growth in tea and moisture content above 11.8 % exhibits multiplication of yeast and moulds. In this context a very safe upper limit for moisture content in tea is around 10 %, as far as yeast and mould proliferation is concerned.

Key words: Moisture content, tea grades, yeast, mould, multiplication