

APPLICATION OF MINCE MACHINE IN BLACK TEA PRODUCTION

A dissertation submitted to the
Faculty of Animal Science and Export Agriculture
Uva Wellassa University

In partial fulfillment of the requirements for the award of
Bachelor of Science in Tea Technology and Value Addition

By
SAMARAHEWA PRABHATH UDAYANGA

Tea Technology and Value Addition Degree Programme
Faculty of Animal Science and Export Agriculture
Uva Wellassa University of Sri Lanka

2015

ABSTRACT

Tea is one of the largest industries in Sri Lanka known as Ceylon Tea around the world. In Sri Lankan black tea manufacture, Orthodox, Rotovane and CTC manufacturing systems predominate in the Tea Industry. The Mincing machine could achieve this in one single process since the screw of the mincer is a variable pitch as such it creates a pressure force at the extruder plate thus causing the juices to come out and coat the leaf surface. At the same time the rotating blade fixed to the screw cuts the leaf before it is extruded out through the extruder plate. This process make the mincer as an ideal solution for making the manufacturing process a continuous operation in comparison to orthodox rolling. However there is a problem with the machine which over heating when continuous processing. The objectives of this study are to produce quality black tea using mince machine in laboratory scale and develop a suitable heat regulation system for the mincing machine to solve the problem of overheating. To regulate unnecessary heat generation two options were used those were cooling with simple water circulation system and cooling with Vaporized liquid Nitrogen. Black teas were produced using the mince machine and evaluated the made tea's Thearubigin and Theaflavin ratio and organoleptic properties. Cooling with liquid nitrogen was effective to retain the organoleptic properties of black tea. Water circulation system was effective for the heat regulation but the method is not suitable to retain the organoleptic characteristics of made tea. Nevertheless, water regulation system is low cost method.

Key words- Heat Regulation, Organoleptic Properties, Black tea quality