

**EFFECT OF ENZYMATIC DISCOLORATION
INHIBITOR ON PLASTICITY RETENTION OF
SOLE CREPE RUBBER**

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

In partial fulfillment of the requirement for the award of the
Degree of Bachelor of Science in Palm and Latex Technology and Value
Addition

By

W.D. SAMEERA PRADEEP SOMARATHNA

**Faculty of Animal Science and Export Agriculture
Uva Wellassa University**

2013

ABSTRACT

Durability of rubber product is very important to customer. As well as manufacture of rubber products try to protect good properties throughout the consuming time period of the product. Durability of raw rubber product is affected aging properties. According to time, most of raw rubber is degradation which is leaded to reduce the properties of raw rubber and less performance of the product. Thermal oxidation is one of badly effect the aging property of raw rubber product. The rubber molecular weight of product will be reduced from thermal oxidation. Resistance to thermal oxidation is measured by plasticity retention index. Sole crepe rubber manufacturing industry always tries to produce higher grade sole crepe. Colour, clearness and purity are affected to grading parameters for sole crepe rubber industry. The colour of sole crepe rubber is manly affected enzymatic discoloration of the natural rubber latex which is complex process. In sole crepe manufacturing industry under fractionation step, Sodium metabisulfite (enzymatic inhibitor) is used to prevent enzymatic discoloration. Through the process, resistance of oxidative components is removed with yellow fraction. As a result plasticity retention index also significantly reduced. Increasing the dosage of Sodium metabisulfite the value of plasticity retention index is reduced. If is not used fractionation process to sole crepe manufacturing process the plasticity retention index is not reduced. Clone is also effected to plasticity retention index to sole crap rubber. Clones of less yellow fraction (RRIC 121 and PB 86) can be treated less dosage of Sodium metabisulfite. Then less effect to plasticity retention index from of Sodium metabisulfite.

Kay word: Plasticity retention index, Sodium metabisulfite, Sole crepe, Colour, Effect