

**EVALUATION OF SUITABILITY OF DISULFIDE  
BASED NATURAL PRODUCT AS A  
RECLAIMING AGENT  
FOR GROUND RUBBER TYRE**

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  
Bachelor of Science in Palm and Latex Technology and Value Addition

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**2013**

## ABSTRACT

Reclaimed rubber is a solution for the shortage of raw rubber and the rise in the cost of virgin rubbers. Also, it reduces the rubber waste and hence the pollution caused by that waste. So there is a continual development of reclaiming technologies over the last few years. In this study disulfide based natural product was used as the reclaiming agent for ground rubber tyre (GRT) with the aim of replacing the hazardous reclaiming agent Tetramethyl thiuram disulfide (TMTD). A series of rubber compounds was produced by blending the reclaimed rubber prepared with different amounts of the natural product with virgin natural rubber (NR). Physico-mechanical properties and cure characteristics of these compounds were evaluated and compared with those of the control; blend compound containing virgin NR and reclaimed rubber prepared with TMTD.

Scorch time, cure time, cure rate index, tensile strength and ageing properties are superior to those of the control. Hardness, tear strength, elongation at break and resilience are also at an acceptable level for tyre treads. Abrasion resistance of natural product added revulcanizates is similar to that of the TMTD added vulcanizates. Therefore readily available, environmentally friendly disulfide based natural product selected for this study could be an alternative to hazardous TMTD in reclaiming of ground rubber tyre. Therefore natural product is suitable for the reclaiming of GRT.

Key words: Ground rubber tyre, reclaiming, cure characteristics, mechanical properties, tyre treads