

## CONTENTS

	<u>PAGE</u>
<b>ACKNOWLEDGEMENTS</b>	
<b>ABSTRACT</b>	
<b>OPSOMMING</b>	
<b>LIST OF TABLES</b>	i
<b>LIST OF FIGURES</b>	ii
<b>LIST OF ADDENDA</b>	iii
<b>ABBREVIATIONS</b>	iv
<b>CHAPTER 1: INTRODUCTION</b>	1
<b>CHAPTER 2: LITERATURE REVIEW</b>	5
<b>2.1 Polledness and animal production</b>	5
<b>2.2 The inheritance pattern of the polled trait</b>	8
<b>2.3 Status of the Bovine genome with specific reference to polledness</b>	12
<b>2.4 Concept overview of Linkage Analysis</b>	15
<b>CHAPTER 3: MATERIALS AND METHODS</b>	19
<b>3.1 Animal sample group</b>	19
<b>3.2 DNA extraction and quantification</b>	20
<b>3.3 Plate design for large scale PCR</b>	22
<b>3.4 Choice of microsatellite markers for the multiplex</b>	23
<b>3.5 Optimization</b>	23

<b>3.6 Fragment determination of DNA samples</b>	<b>30</b>
<b>3.7 Collection and formatting of genotypic data</b>	<b>30</b>
<b>3.8 Statistical evaluation of the data</b>	<b>32</b>
<b>3.8.1 Linkage Analysis</b>	<b>32</b>
<b>3.8.2 Allelic Association using the Transmission Disequilibrium Test</b>	<b>33</b>
<b>CHAPTER 4: RESULTS</b>	<b>36</b>
<b>CHAPTER 5: DISCUSSION</b>	<b>41</b>
<b>CHAPTER 6: CONCLUSION</b>	<b>46</b>
<b>REFERENCES</b>	