



EFFECT OF COAT COLOR AND TYPE ON PHYSIOLOGICAL RESPONSE OF ZEBU CATTLE TO HEAT STRESS IN KENYA



Evance Ogingo ^{1*}, Kiplangat Ngeno ², Thomas Muasya ³, P.O. Box 536-20115 Egerton Kenya

¹Egerton University, Department of Animal sciences,

²Egerton University Department of Animal Science

³Egerton University Dept. of Animal science

Introduction

heat stress:

rectal temperature RT↑

respiration rate RR↑

heart rate HR↑

critical temperature (T):

15-25°C

insulation: zebu Coat

color(CC) and hair

length(CT)

Methodology

Area of study Isiolo

county

temperature: thermometer

CT: ruler(mm)

CC: visual observation

RT: thermometer placed

inside anus

RR: flank movement

HR: thumb at chest

Timing: stopwatch



Results

Analysis software: Proc glm of

SAS 2004

Model

$$\begin{matrix} \text{RT} \\ \text{HR} \\ \text{RR} \end{matrix} = \begin{matrix} \text{T} \\ \text{CT} \\ \text{CC} \end{matrix} + \begin{matrix} \text{T} \\ \text{CC} \\ \text{CT} \end{matrix}$$

Table1: effect of temperature on physiological and coat hair response

T: 32.2°C	T: 36.9°C
RT p<0.05 38°C	39°C
HR p>0.05 47bpm	56bpm
RR p<0.05) 25bpm	38bpm
CT p>0.05) 1.1mm	0.72mm

Table2: effect of coat color and type in regulating body temperature

color	HR bpm	RT °C	RR bpm	CT mm
Dark-brown	24	33	39	0.78
white	50	31	38	1.1
fawn	76a	37.9	30	0.6
red	56b	38.1	26	0.9
brown	42c	38.2	38	1.3

summery

Strict thermoregulatory provide adaptation
There is need to provide water and shade