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PREVENTION OF ANTLER GROWTH IN DEER

**A thesis presented in partial fulfilment of the requirements
for the degree
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Abstract

The behavioural measures of 31 red and 39 fallow deer yearlings prior to, during and following application of rubber ring to prevent antler growth were determined. Animals were mechanically or manually restrained and treated according to their random allocation to one of the following groups: control (C), local anaesthesia only (LC), local anaesthesia and rubber ring application (LR), rubber ring application only (R).

In a further field trial 45 yearling red deer stags and 84 yearling fallow bucks were randomly allocated to control or rubber ring application.

In both studies the development of the pedicle/antler post treatment was examined at intervals to investigate the percentage of loss of pedicle/antler due to the treatment and to detect possible side effects of the treatment.

In red deer during the first three hours post treatment a significant increase in walking, standing and feeding and a decrease in lying were seen in the R group. Twenty minutes after treatment the R group showed a significantly higher frequency of scratching. In fallow deer a significant increase in frequency of ear flicks was observed in the R group until six hours post treatment. Other activities (walking, standing, lying) varied significantly at some time periods but no consistent patterns were observed.

In both species a substantial reduction of the pedicle/antler could be observed two to four weeks after application of rubber rings. However, the loss of distal parts of the pedicle/antler varied in percentage and time until the loss. A rate of 38-100 % regrowth occurred in the first study in fallow and red deer, respectively.

In red deer the application of rubber rings stopped further antler growth in 36 of 37 stags thirty days after treatment. The loss of pedicle/antler occurred in 60-66.7 %.

In fallow deer 93% pedicle/antler loss occurred in bucks. A rate of 10 % regrowth occurred.

No infections or other untoward side effects of the treatment were seen.

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List of abbreviations

ACTH	adrenocorticotrophic hormone
ANOVA	analysis of variance
as	after slaughter
bpm	beats per minute
C	control
can	cannulation
CIDR	controlled internal drug release device
cm	centimeter
ck	creatine kinase
DSP	deer slaughter premises
ECO	enchondral ossification
et. al.	et altera
f	female
FSH	follicle stimulating hormone
g	gram
GnRH	gonadotropin releasing hormone
ha	hectare
hrs	hours
HPA	hypothalamic-pituitary-adrenocortical axis
IGF	insulinlike growth factor
IMO	intramembraneous ossification
IU	international Units
km	kilometer
l	liter
LC	local control
LH	luteinizing hormone
LR	local rubber (anaesthetic and rubber ring application)
m	male
µg	microgram
m ²	square meter
ml	milliliter
ng	nanogram
no	number
nmol	nanomol
OPC	ossification pattern change
QA	quality assurance
R	rubber (ring without prior anaesthesia)
re	remote
sec	second
U	units
vp	venepuncture
yrs	years

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