82. Use of a GnRH agonist (leuprolide) to suppress rut-associated events in farmed male red deer (*Cervus elaphus*)

GK Barrell[a] & LA Miller[b]

[a]*Agriculture and Life Sciences Division, P.O. Box 84, Lincoln University, Canterbury 8150, New Zealand and* [b]*Product Development Research Program, USDA APHIS WS National Wildlife Research Center, 4101 LaPorte Avenue, Fort Collins, Colorado 80521, USA*

This study examined the effectiveness of leuprolide, a GnRH agonist, for suppressing some of the rut-associated events in farmed male red deer that cause problems for management of these animals. About 6 weeks prior to commencement of the rut period adult red deer stags in 3 groups ($n = 10$) received leuprolide, administered subcutaneously in a 90-day release formulation, at zero (0 mg, control), low (22.5 mg) or high (45 mg) doses. Treatment with leuprolide caused a suppression of mean plasma LH concentration that was significant ($P < 0.05$) at 9 weeks. Mean plasma testosterone concentration of all three groups rose initially, then declined prematurely in the leuprolide-treated groups, so that it was significantly ($P < 0.05$) suppressed (0.66 ± 0.29 and 2.0 ± 0.88 ng/ml, low and high dose respectively) in the mid rut period when the peak value (9.0 ± 1.94 ng/ml) was recorded from control stags. A reduction in mean live weight occurred in all 3 groups throughout the 3 months of rut period but this did not differ between treatments. However a corresponding reduction in mean body condition score was greater in the control stags ($P < 0.05$). There was some evidence that leuprolide treatment stimulated aggressive behaviour initially, but it suppressed roaring behaviour later in the rut.

Although the results show a dose-related suppressive effect of this GnRH agonist on LH and testosterone secretion in male red deer, there was only a minimal effect of the treatment on aspects of major concern to farmers such as weight loss and aggressive behaviour.

We acknowledge M Ridgway, S Schaafsma and M Wellby for technical support, Dr AF Parlow for LH assay reagents and Dr GD Niswender for testosterone assay reagents. Atrix Laboratories, Fort Collins, Colorado, USA are thanked for the generous donation of the leuprolide acetate formulation.

Nottingham University Press
Manor Farm, Church Lane, Thrumpton
Nottingham NG11 0AX, United Kingdom
www.nup.com

NOTTINGHAM

First published 2007