OBSERVED RESPONSES IN A.I. STUD BOARS WITH DIMINISHED LIBIDO TO TREATMENT WITH SYNTHETIC PROSTAGLANDIN F2α

J GRAY*, C G GREEN, P N HOOPER
MASTERBREEDERS (LIVESTOCK DEVELOPMENT) LTD, THE PIG IMPROVEMENT CENTRE, HASTOE, TRING, HERTS, U.K.

Introduction

From time to time occasional stud boars, otherwise free from clinical signs of disease or disorder, will suffer a serious loss of libido. Reaction time, defined as the time taken by experienced boars on entry to the collection room to mount a dummy sow and achieve erection using the gloved hand technique, Reed (1969), varies between individual boars and is influenced by such factors as the skill of the collector and the time interval since the last collection. The sum of "reaction times" for all boars in the centre, with staff in attendance, represents a production cost. Boars with diminished libido add significantly to this cost.

This paper describes a trial designed to elucidate the clinical impression that the reaction time of boars with diminished libido is reduced by the administration of Prostaglandin F2α (PGF2α) and seeks to identify consequential effects upon the quality and efficacy of the sperm rich fraction.

Method

The reaction times for thirty boars standing in an Artificial Insemination (A.I.) Centre were recorded during the course of their normal work routine. All boars at the centre are collected regularly at intervals of five to seven days in a central collecting room maintained at 20°C±3°. Following each collection intended for distribution to users, the volume and density of the sperm rich fraction is measured and the sperm motility subjectively assessed.

The mean reaction time for each boar in the centre was calculated, from which the overall weighted mean reaction time for the centre was established.

Seven boars were selected for treatment from among those with reaction times around and beyond the mean centre reaction time. The two PGF2α dose levels were selected with reference to those used by Hemsworth et al (1977).

Treated boars entered the central collection room twenty minutes after the intramuscular injection regime and their reaction times were recorded, together with the routine monitoring of the sperm rich fraction following each collection.

Results

Mean reaction times for untreated boars in the centre varied from seven to twenty four and half minutes. During the course of these observations, there was no evidence of either operator or seasonal effect on reaction time.

The overall weighted mean of reaction time for the centre, calculated from two hundred and twenty four collections, was fourteen minutes.

Three of the seven boars selected for treatment showed a statistically significant response. (Table 1)

Treatment with PGF2α appeared to have no statistically significant effect on the volume of the sperm rich fraction nor on semen density when compared with each boar's ten previous collections prior to treatment.

Reports from AI users have provided no evidence that boars under treatment have suffered a depression in fertility.

Discussion

This trial provides some evidence to confirm our clinical observations that PGF2α therapy is of value in the treatment of boars with diminished libido, and that its primary indication in this context is to bring reluctant stud boars back into work and perhaps, as a last resort, to bring maiden boars into work.

All treated boars, with one exception, showed a trend towards increased volume of the sperm rich fraction.

Semen density was estimated as concentration of sperm per ml using a portable colorimeter. No overall trend was noted in the treated group.

The lack of significant differences for semen volume and density, before and after treatment, may be explained by the small size of the treatment group of boars.

Further studies are needed into the consequential effects of PGF2α therapy before its commercial use can be advocated.

The possibility that there may be a genetic basis to diminished libido must not be overlooked, and the dangers of perpetuating such genetic liability through treatment is a matter for further investigation.

Table 1. Mean Reaction Time (minutes)

Boar	Standard Regime(SR)	n	SR+PGF2α	n	PFG2α	Diff
1	13.3 (1.27)	12	13.3 (2.60)	5	20mg	0
2	19.8 (2.30)	4	4.3 (0.75)	4	20mg	15.5**
3	15.2 (1.10)	6	5.0 (-)	1	10mg	10.2
4	24.5 (3.38)	10	5.5 (0.87)	4	10mg	19.0**
5	21.3 (2.57)	6	8.0 (2.70)	4	20mg	13.3*
6	12.8 (1.90)	9	3.7 (-)	1	10mg	9.1
7	15.5 (3.06)	6	7.0 (1.2)	3	10mg	8.5

n = number of collections
SEM = ( ) PGF2α (Lutalyse. Upjohn Ltd., England)

Selected references : Reed, H.C.B. Artificial insemination and fertility of the boar, BR.vet.J. 125 : 272, 1969 P.H. Hemsworth, J. Donnelly, J.K. Findlay and D.B. Galloway. The Effects of Prostaglandin F2 on Sperm Output in Boars. Prostaglandins 13:933, 1977.