

Timing of the LH peak and P4 blood concentration after the ovulations in buffalo cows during different superovulatory treatments

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INTRODUCTION

Buffalo species is characterized by a low response to superovulation. In particular, after superovulatory treatment, buffalo shows good follicular response, moderate ovulatory rate and CL yield but, in contrast, low embryo recovery rate. Few informations regarding hormonal patterns during multiple ovulation and embryo transfer (MOET) in buffalo species are available. The aim of the trial was to assess the LH preovulatory peak and P4 blood concentration after ovulation in buffalo cows subjected to three different superovulatory treatments



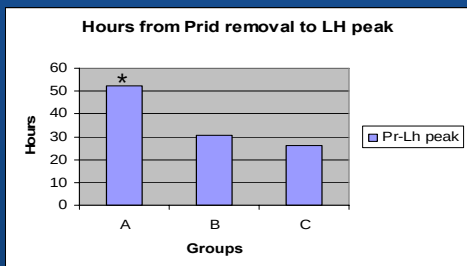
MATERIAL AND METHODS

On 12 adult buffaloes synchronized by a double PGF2 α injection 12 days apart, a progesterone releasing intravaginal device (PRID) was inserted on the day of estrus (d0) and the animals were divided in three homogeneous groups: Group A received a 4-days decreasing dose (175-150-100-75 IU from d7 to d10) of an equal mixture of 1000 IU of FSH+LH and PGF2 α on d9 at PRID withdrawal; Group B was treated by a single i.m. injection of 2000 IU of PMSG (d7) and PGF2 α on d10 at PRID withdrawal; Group C received 2000 IU of PMSG (d7), PGF2 α (d10 at PRID withdrawal) and a 2-days (d10=100; d11=75) decreasing dosage of 300 IU of FSH+LH; all the FSH+LH daily doses were administered 12 hours apart (half-half). Ultrasound examinations were performed daily starting on day 7 till the ovulations by a 7.5 Mhz linear rectal probe. Starting 12h after the PRID removal, every 4h took place 22 consecutive blood samplings to LH assays. Four days after the PRID removal (Pr.) blood samplings took place daily for 4 consecutive days to assess P4 concentration.

RESULTS AND DISCUSSION

All buffaloes had a preovulatory LH peak that occurred earlier ($P<0.05$) in Group B and C than in Group A (30.5 ± 8.9 h and 26.0 ± 15.1 h vs 52.5 ± 12.2 h, respectively). After the preovulatory LH surge, concentration of P4 started increasing earlier ($P<0.05$) in Group A than in Groups B and C. There were no significant differences in the mean values of LH peak (6.45 ± 3.44 ng/ml) nor in ovulation rate (mean number of CL= 2.67 ± 1.97). These results suggest that the different superovulatory treatments affected the timing of LH peak and P4 concentration increase after ovulation but not the LH peak mean values and the ovulation rate, and that treatment A seems could induce an earlier luteinization.

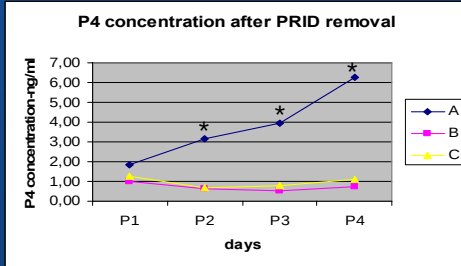
Effect of superovulatory treatments on:



* Values different for $P\leq 0.005$

Correlation coefficient between

Pr- LH peak and P2: $r = 0.65$ ($P = 0.02$)
 Pr- LH peak and P3: $r = 0.69$ ($P = 0.01$)
 Pr- LH peak and P4: $r = 0.71$ ($P = 0.006$)



* Values different for $P\leq 0.005$