Determining the requirement of puberty induction to the reproductive performance of Bos indicus-influenced heifers submitted to AI

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Introduction

- Puberty attainment is critical for heifer fertility and it is delayed in *Bos indicus*-influenced heifers;
- Puberty induction through progesterone (P4) supplementation can favor pregnancy success to estrus synchronization protocols;
- However, use of an induction protocol may not be required when synchronization protocol is based on P4

Aim: To investigate the requirement of induction protocol on puberty attainment and pregnancy/AI (P/AI) in beef heifers.

Material and Methods

- Yearling, Brahman-influenced heifers were classified as pubertal (**PUB**; n=363) or prepubertal (**PRE**; n=214) and submitted to induction (**CIDR**) or not (**Non-CIDR**) before an estrus synchronization (Synch) program.

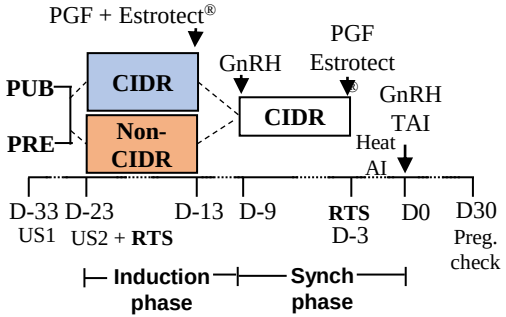

Fig. 1. Experimental design

Results

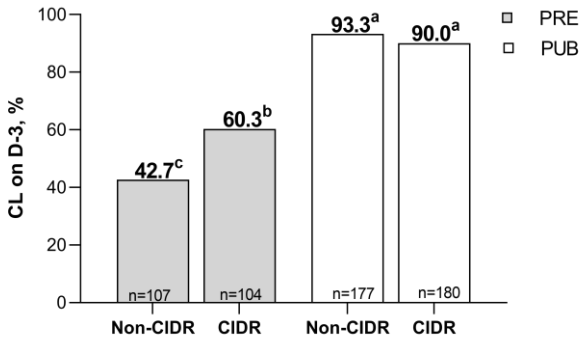

Fig.2. Induction increased proportion of PRE heifers that attained puberty, based on ovulation to the Synch. protocol, but PUB heifers were not affected (pubertal status x treatment effect: P= 0.02).

Table 1. Induction neither increased proportion of PRE heifers showing estrus by TAI, nor P/AI. PUB heifers had the greatest estrus response and P/AI (pubertal status effect: P < 0.01).

Variable	PRE		PUB	
	Non-CIDR (n= 109)	CIDR (n=105)	Non-CIDR (179)	CIDR (n= 184)
Estrus by TAI, %	41.4	43.9	73.9	67.0
P/AI, %	29.2	30.4	50.7	42.2

Results

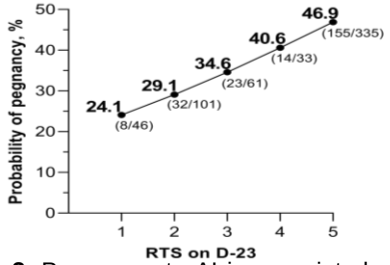

Fig. 3. Pregnancy to AI is associated positively (P<0.01) with RTS measured prior to induction (D-23).

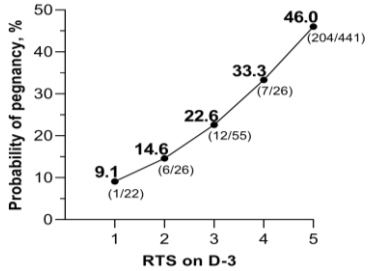

Fig. 4. Pregnancy to AI is associated positively (P<0.01) with RTS measured after synch (D-3).

Conclusion

Induction protocol hastened puberty attainment but failed to increase pregnancy to AI of prepubertal *Bos indicus*-influenced heifers submitted to an estrus synchronization protocol based on P4.

Acknowledgments

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