

Re-utilization of norgestomet implants in superovulated Nelore cows

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Introduction:

The re-utilization of progestin implants is an alternative to reduce costs in protocols to induce ovulation in cows. The objective of this study was to evaluate the re-utilization of norgestomet implants in Nelore cows superovulated with eCG. The methodology proposed aimed the reduction of costs with superovulation protocols in Nelore embryo transfer programs.

Materials and Methods:

The experiment was performed at Embrapa experimental farm, located in São Carlos in the southeast of Brazil. Eight Nelore cows (*Bos taurus indicus*) were randomly distributed in two experimental groups. Group 1: On D0, a random day of the estrus cycle, half of the cows received a new norgestomet implant (Crestar®, Intervet) and 2 mg IM of estradiol benzoate (BE) (Estrogen®, Farmavet) and Group 2: On D0 the other half received 2 norgestomet implants, which were used before during 8 days, and also 2 mg of BE. On D4 cows from both groups received one single dose of 2000 IU of eCG (Folligon®, Intervet). On D6 two doses of PGF_{2α} (150 µg) (Sincrocio®, Ourofino) were administered. The implants were removed 36 hours after the first PGF_{2α} and 12.5 mg of LH IM (Lutropin-V®, Bioniche) was administered 48 hours after the PGF_{2α}. The cows were artificially inseminated 12 to 24 hours after LH injection with semen from just one bull. The number of follicles with ability to ovulate was estimated through transrectal ultrasonography (MINDRAY DP 3300) at the moment of LH administration (D8) and the ovulation rate was estimated on D15. The cows were flushed on D15 and blood samples were collected for progesterone radioimmunoassay using LDH from FMVZ-USP. The results were analyzed through unpaired t Test and Fisher's Exact Test with a significant level of 5% (P < 0.05).

Results and Discussion:

The superovulatory response was higher on Group 1. The mean number of corpus luteum (CL) and ovulation rate was also higher on Group 1. The results indicate that the superovulatory response with the re-utilization of 2 norgestomet implants in Nelore Cows is less intense when compared with the use of just one new implant.

Table 1. Results (Mean ± sd, when applicable) of superovulation in Nelore cows using new or used norgestomet implants:

	Group 1. (1 new implant)	Group 2 (2 used implants)
Nº follicles >8mm	17.1 ± 1.8 ^a	9.7 ± 1.6 ^b
Follicular diameter (mm)	10.5 ± 1.6	10.2 ± 1.7
Nº CL	13.8 ± 1.7 ^a	5.5 ± 1.0 ^b
CL diameter (mm)	15.7 ± 1.8	14.4 ± 1.7
Ovulation rate (%)	80.3 ^a	53.8 ^b
Nº recovered structures	6.3 ± 1.1	4.0 ± 1.9
Nº transferable embryos	4.0 ± 1.8	2.5 ± 1.1
[Progesterone] ng/ml	36.1 ± 8.3	35.1 ± 6.9

^{a,b}Different letters on the same line indicate statistical differences (P < 0.05).

*Progesterone measurements with 91% sensibility. The coefficient of variation intra assay was 9.1 and 5.6% and between assays 2.4 and 0.6%.

References

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