

SYNCHRONIZATION OF OVULATION IN NELORE COWS (*Bos indicus*) USING GnRH AND PGF2 α

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Introduction

Nelore is the predominant breed of beef cattle in Brazil (around 70 million). As in other zebu breeds, oestrous behaviour is shorter (around 10 h) than in European breeds and approximately 30-50% of Nelore show oestrous at night. Consequently, oestrous detection is poor leading to low reproductive efficiency in artificial insemination programs. To eliminate the dependence on oestrous detection, protocols for synchronizing the time of ovulation using GnRH and PGF2 α have been used recently for dairy *Bos taurus*. The objective of the present study was to test the effectiveness of GnRH and PGF2 α for synchronizing the time of ovulation in Nelore cows.

Material and Methods

Lactating (L, n=8) and non lactating (NL, n=8) Nelore cows at random stages of the oestrous cycle were treated as follow: GnRH (buserilin, 8 μ g, i.m.) \rightarrow 7 days later PGF2 α (Lutalyse, 25 mg, i.m.) \rightarrow 28-30 h later another injection of GnRH (8 μ g). The control group (CTRL, non lactating cows, n=7) did not received the second injection of GnRH. Ovarian morphology was monitored daily or every other day by transrectal ultrasonography from the start of treatment until PGF2 α administration. After PGF2 α , ultrasonography was done every 12 h until ovulation.

Results

The first injection of GnRH caused ovulation and formation of a new corpus luteum in 2/8 (L), 4/8 (NL) and 1/7 (CTRL) cows. Corpora lutea regressed after PGF2 α in 7/8 (L), 8/8 (NL) and 6/7 (CTRL) animals. The estimated interval between PGF2 α injection and ovulation was 61.8 ± 1.9 (L), 60.9 ± 2.7 (NL) and 93.1 ± 11.6 h (CTRL). The second injection of GnRH advanced ovulation approximately 32 h compared to control group and synchronized the ovulation to occur 31.74 ± 1.82 (L) and 33.87 ± 2.66 h (NL) after its administration. Overall ovulation rates were 87.5% (L, 7/8), 75% (NL, 6/8) and 85% (CTRL, 6/7). Additionally, 5/7 (L), 5/6 (NL) and 5/6 (CTRL) of the ovulatory follicles were from a new follicular wave. It is concluded that in the present protocol the first injection of GnRH was not very effective in promoting ovulation, however it did originate a new follicular wave and PGF2 α administration followed by the second injection of GnRH synchronized the ovulation of a new follicle in most Nelore cows. Supported by FAPESP.