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The effect of plant lipid extender component on quality of frozen ram semen

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Experiment was designed to test different concentrations and different homogenization protocols of soybean lipids liposomes for the use as a milk replacement in ram semen freezing extender. Lipids were homogenized by high pressure homogenization (800 bars) and then 5% (Y1 extender) or 10% (Y2 extender) liposomes were mixed with 8% glycerol. As additional group, lipids and glycerol were homogenized together (LIPO extender). All 3 extenders (Y1, Y2, LIPO) were prepared in Tris buffer containing citric acid and fructose. As control group milk/egg yolk (MY) extender was used. The semen was collected from 3 rams with artificial vagina. Post thaw motility and survival time (total of 11 ejaculates), lipid peroxidation (total of 7 ejaculates) and sperm membrane integrity (total of 3 ejaculates) were examined in 4 extenders tested. Immediately after collection each ejaculate was divided into 4 parts, diluted with Y1, Y2, LIPO and MY extenders and processed according schedule. Post thaw motility and survival time: Mean sperm motility examined immediately after thawing for Y1, Y2, LIPO and MY extenders was 51.4%, 46, 8%, 50.6% and 44.4% respectively. Mean survival time of spermatozoa kept at 42°C was 200, 220, 255 and 135 minutes for Y1, Y2, LIPO and MY extenders respectively. Lipid peroxidation was monitored by chemiluminescence method. Iron induced luminescence of frozen/thawed sperm cells was assessed using a luminometer. It was shown that Y1, Y2 and LIPO semen extenders had significantly lower peroxidation level than MY extender. The values of Integral parameter for Y1, Y2, LIPO, MY extenders was 4,57; 5,49; 4,31; 28,70 respectively. Sperm membrane integrity: After thawing semen sample was diluted with PBS to 20mln/ml concentration and kept for 1h at room temperature. Sperm membrane examination ("live/dead") was performed by double staining with SYBR-14/propidium iodide fluorochromes and analysis by flow cytometry. Data of 20 000 spermatozoa were collected for each sample. The percentage of membrane intact ("live") spermatozoa was taken for statistical analysis. The mean percentage of live spermatozoa for Y1, Y2, lipo and milk extenders were 10.79%, 10.61%, 10.82% and 4.71% respectively. Statistically significant differences was found between milk and Y1, Y2, LIPO (test t, $P<0.05$).

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Effect of treatment for estrous cycle control on fertility of inseminated ewes

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To evaluate the fertility of inseminated ewes with estrus synchronized through different progestins and duration treatments. Based on live weight and body score, 136 adult Pelibuey hair ewes, were assessed into 6 treatments: Long cycle (14 days) with sponges containing either 60 mg of Medroxiprogesterone (LCMAP, n=24); 40 mg of Fluorogestone Acetate (LCFGA, n=31), or a 0.3g Progesterone CIDR (LCP, n=20) and Short cycle (7 days) combined with all intravaginal pessaries mentioned; SCMAP (n=21); SCFGA (n=20); SCP (n=20). Ewes were fed in Star Grass pastures + 250 g/hd/d of a 14% CP supplement. On day of intravaginal devices withdrawal (D0), 200 IU of eCG were administered I.M. (Foligon: INTERVET; eCG OVEJERO). From 24h of D0, estrus was detected aided by vasectomized rams. Ewes were A.I. cervically with refrigerated semen (150x106 sperms) 36 h after detected in estrus. Ewes were observed for return to estrus 16 days after insemination. At day 50 post A.I., gestation was diagnosed by ultrasonography (Toshiba Sonolayer SALT 32; 5 MHz probe). Gestation rates were analyzed by Chi squared test. Observation of estrous behavior ranged 24-40 h (LC: 28-40; SC: 28-32). Only 73% of ewes were detected in estrus (LC 89; SC 54; $P< 0.05$). Overall fertility (F) rate was 64%. Fertility differences ($P<0.05$) were observed among SC treatments, 55% for SCFGA and 57 % for SCMAP vs. 85% for SCP. No differences were found within LC treatments. Fertility of SC versus LC treatments, showed significance ($P<0.05$) between SCP and LCP (85 vs. 60 % respectively). Also, a favourable tendency ($P<0.1$) of SCP above LCMAP (85 vs. 69 % respectively) and SCP vs. LCFGA (85 vs. 71 % respectively) was observed. Total prolificacy average was of 1,43, being greater ($p<0.05$) in LC treatments compared to SC (1,58 vs. 1,25 respectively). Prolificacy in SCFGA treatment was greater ($P<0.05$) compared to SCMAP y SCP (1.45 vs 1.25 y 1.11). No differences were observed among LC treatments. Duration of progestin treatments to synchronize estrus, affect presentation of estrous without influencing fertility. CIDR devices for 7 days, allow obtaining a greater fertility as compared with intravaginal sponges. Progestin treatments for 14 days yield a greater prolificacy than 7 days treatments. Projects:DGEST 509.07-P and CONACYT-SAG.

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Rate and timing of ovulation and pregnancy rate in Nelore cows treated with estradiol Cypionate or Benzoate to induce ovulation on FTAI protocols

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In order to minimize the number of handling during protocols that allow fixed-time artificial insemination (FTAI), two studies were performed to evaluate the follicular dynamics (Experiment 1) and pregnancy rate (Experiment 2) in Nelore cows (*Bos indicus*) treated with estradiol Cypionate (EC) or Benzoate (EB) as ovulation inductor. At Experiment 1, it was used 37 Nelore cows with body condition score (BCS) of 2.62±0.13 (1 to 5 scale). At day 0 (AM), all animals received 2mg of EB (Gonadiol®,Syntex, Argentina) and an intravaginal progesterone device (DIB®, Syntex, Argentina). On Day 8, the cows were allocated in one of three groups, considering the BCS and cyclicity status. At this day, the device withdrawal was performed, 500µg of Cloprostenol (Ciosin®, Schering-Plough, Brazil) and 300UI of eCG (Novormon®, Syntex, Argentina) were administered in all animals (AM for CE8 and BE9 groups and PM for BE8,5 group). The cows of group CE8 (n=10) received 1.0mg of EC (ECP®, Pfizer Saúde Animal, Brazil) and the cows of BE8,5 (n=15) received 1.0 mg of EB on device withdrawal. The cows of Group BE9 (n=12) were treated with 1.0mg of EB 24 hours after the device removal (D9). Ultrasound (Chison 600VET) examinations to monitor follicular dynamics occurred every 12h from device withdrawal until ovulation. Data was analyzed for normality and equal variance, and transformations were used if needed. The statistical analysis was accomplished by GLM procedure of the Statistical Analyses System (SAS). The results for groups CE8, BE8,5 and BE9 were, respectively: diameter of the ovulatory follicle (14.3 ± 0.4^{a}, 12.3 ± 0.4^{b} and 13.3 ± 0.6^{ab} mm; p=0.01), ovulation rate [9/10 (90.0%), 15/15 (100%) and 11/12 (91.7%); p=0.99] and interval from device removal to ovulation (72.0 ± 2.0^{a}, 57.6 ± 1.3^{b} and 72.0 ± 0.0^{a} h; $p<0.001$). On Experiment 2, 584 Nelore cows were allocated in 3x2 factorial [treatments (CE8, BE8,5 and BE9) and FTAI period on D10 (AM or PM)] considering the BCS and post-partum period. The statistical analysis was accomplished by GLIMMIX procedure of SAS. There were no interactions between the treatments and the FTAI period. There was no statistical difference on pregnancy rate between group CE8 (57.5%; 118/193), BE9 (59.9%; 118/197) and BE8,5 (49.5%; 96/194; P=0.09) and between the FTAI performed at AM (56.6%;164/290) or PM (54.8%;161/294; P=0.66). These results show that EB on BE8,5 protocol and EC can be used for inducing ovulation, allowing a reduction in the number of animal handling and the FTAI during all day. Acknowledgements: Schering-Plough and USProducts Brasil Eletromedicina Ltda.