Reproduction in Domestic Animals

Vol. 46 · Supplement 3
September 2011 · 1-161

Editor-in-Chief: Heriberto Rodriguez-Martinez
Guest Editor: Detlef Rath

The 15th Annual Conference of the European Society for Domestic Animal Reproduction (ESDAR)

Antalya, Turkey
15–17 September 2011

Official Organ of
European Society for Domestic Animal Reproduction
European Veterinary Society of Small Animal Reproduction
Spanish Society of Animal Reproduction

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The Journal is indexed by: AgBiotech News and Information; Agricola C R I S; Animal Breeding Abstracts; BIOBASE; Biological Abstracts; BIOSIS Previews; Chemical Abstracts; Current Contents; Dairy Science Abstracts; Derwent Biotechnology Abstracts; Food Science and Technology Abstracts; Forest Products Abstracts; Forestry Abstracts; Index Veterinarius; MEDLINE; Nutrition Abstracts and Reviews; Personal Alert; Pig News & Information; Poultry Abstracts; Protozoological Abstracts; Referativnyi Zhurnal; Review of Medical and Veterinary Mycology; Science Citation Index; Soybean Abstracts (Online Edition); Veterinary Bulletin; Wildlife Review Abstracts; World Agricultural Economics and Rural Sociology Abstracts.

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Responsible according to Berlin press law: Prof. Dr. H. Rodriguez-Martinez.

Information for subscribers
Reproduction in Domestic Animals is published in 6 issues per year. Institutional subscription prices for 2011 are: Print & Online: £786 (UK), €999 (Europe), $1452 (The Americas), $1692 (Rest of World). Prices are exclusive of tax. Australian GST, Canadian GST and European VAT will be applied at the appropriate rates. For more information on current tax rates, please go to www.wileyonlinelibrary.com/tax-vat. The institutional price includes online access to the current and all online back files to January 1st 1997, where available. For other pricing options, including access information and terms and conditions, please visit www.wileyonlinelibrary.com/access.

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Publisher
Reproduction in Domestic Animals is published by Blackwell Verlag GmbH, Rotherstraße 21, 10245 Berlin, Germany. Tel: (+49 30) 470314-65, Fax: (+49 30) 470314-77. Blackwell Verlag is now part of Wiley-Blackwell

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REPRODUCTION IN DOMESTIC ANIMALS, (ISSN 093606768) is published bimonthly. US mailing agent: Mercury Airfreight International Inc., 365 Blair Road, Avenel, NJ 07001, USA. Periodical postage paid at Rahway, NJ. Postmaster: Send all address changes to Reproduction in Domestic Animals, Journal Customer Services, John Wiley & Sons Inc., 350 Main St., Malden, MA 02148-5020.

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ISSN 0936–6768 (Print) ISSN 1439-0531 (Online)
Printed in Singapore by Markono Print Media Pte Ltd.
For submission instructions, subscription and all other information visit: http://wileyonlinelibrary.com/journal/rda
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Estrus synchronization during transition period, timed artificial insemination (TAI) and the effect of GnRH administration at the TAI on fertility in lactating goats

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The study was carried out to determine the efficacy of synchronization of estrus with vaginal sponges for 6 (Short Term, ST) or 12 (Long Term, LT) days, TAI 48 h after sponge withdrawal in combination with GnRH administration at TAI on the fertility of lactating goats during the transition period. Research was conducted on 104 goats (2–5 years old). The goats received vaginal sponges containing 30 mg fluorogestone acetate. Additionally, 400 IU PMSG and 0.075 mg cloprostenol were administered at the time of sponge withdrawal. The goats were randomly assigned to ST (n = 52) and LT (n = 52) treatment with vaginal sponges. Two teaser bucks were introduced for estrus detection. Goats were inseminated intracervically with cooled semen (1×10^8 motile cells/ml) 48 h after sponge withdrawal. Both ST and LT groups were divided into two groups as ST1 (n = 24) and ST2 (n = 24), LT1 (n = 22), LT2 (n = 23). ST1 and LT1 groups were left as control, ST2 and LT2 groups received 5 μg buserelin acetate at TAI. The mean interval from sponge removal and the onset of estrus and estrus rates for ST and LT groups were 36.0 ± 1.7 and 38.8 ± 1.1 h and 79.1% and 86.6%, respectively ($p > 0.05$). Pregnancy and twinning rates of the ST1, ST2, LT1 and LT2 groups were 37.5%, 41.6%, 40.9%, 47.8% and 22%, 30%, 11%, 18%, respectively. It was concluded that the TAI could be established by ST and LT sponges applications. Although the pregnancy and twinning rates of the GnRH groups were numerically higher than the others, the difference among the groups was statistically insignificant ($p > 0.05$).

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The antioxidative effects of cysteamine, hyaluronan and fetuin on post-thaw semen parameters of Brown-Swiss bulls

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The aim of this study was to compare the effectiveness of different antioxidants (cysteamine, hyaluronan and fetuin) to freeze bull semen. Ejaculates from Brown-Swiss (n = 36) were diluted in seven aliquots with Tris-based extender containing cysteamine (2.5, 7.5 mM), hyaluronan (0.5, 1 mg/ml) and fetuin (5, 10 mg/ml), and an extender containing no antioxidants (control) respectively. Thereafter they were frozen and thawed following a standard protocol. The effectiveness of freezing extenders was assessed according to post-thaw sperm motility (evaluated by means of CASA), acrosomal and total abnormalities (evaluated by means of Hancock solution under phase-contrast microscopy) and plasma membrane integrity (evaluated by means of HOST). The use of a Tris based extender supplemented with 2.5 mM cysteamine (55.3 ± 2.2%) and 10 mg/ml fetuin (52.6 ± 2.9%) led to an increase in postthaw motility and significant decreases in acrosomal (4.9 ± 0.3% and 4.3 ± 0.4% respectively) and total abnormalities (13.0 ± 0.7% and 11.7 ± 0.6% respectively) in comparison to other groups ($p < 0.001$). The postthaw progressive motility was significantly better for semen parts diluted in hyaluronan 1 mg/ml and cysteamine 2.5, 7.5 mM compared to other groups. For average path velocity (100.2 ± 6.5 μm/s), curvilinear velocity (160.7 ± 15.4 μm/s) and amplitude of lateral head displacement (6.3 ± 0.5 μm), the highest values were obtained from hyaluronan 1 mg/ml ($p < 0.05$). Except 5 mM fetuin, all treatments significantly increased the HOST (56.4 ± 1.4%) results as compared to the control group ($p < 0.001$). Supplementation with these antioxidants prior to the cryopreservation process protected sperm motility against the cryodamage. Furthermore, future research should focus on the molecular mechanisms of the antioxidative effects of the antioxidants cysteamine, hyaluronan and fetuine during cryopreservation.

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Effects of semen extender enriched with vitamin E in chilled canine epididymal spermatozoa

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The aim of the present study was to investigate the protective effects of vitamin E in canine epididymal spermatozoa after 40 h of chilling. Eight experimental units, each consisting of a pool of epididymal spermatozoa from three healthy dogs (total of 24 animals) were analyzed. After orchiectomy, recovered epididymal spermatozoa were pooled and separated in four samples, two were incubated with Tris egg yolk extender (control-CE), while the others were submitted to a Tris egg yolk extender enriched with 0.25 mM/ml of vitamin E (antioxidant-AE). One sample of each extender was immediately evaluated (fresh) while the other was evaluated 40 h after chilling in a cool storage container (Botutainer®). Total motility, vigor, hyposmotic and thermal resistance tests and free radicals quantification were performed in all samples. The results were analyzed by Tukey test, with significance level 5%. In fresh samples, the control group presented motility, vigor and hyposmotic test values of 78, 4, and 71%, respectively. Thus, the enrichment with vitamin E did not affect sperm parameters ($p > 0.05$). In chilled samples enriched with vitamin E, motility (21%), vigor (16%) and hyposmotic test (17%) increased significantly ($p < 0.05$), compared to the control group that presented values of 43% of motility, 2.8 of vigor, and 51% in the hyposmotic test. In conclusion, the extender containing 0.25 mM/ml of vitamin E improved physical characteristics of canine epydidimal spermatozoa after 40 h of chilling.

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Influence of isolated bacteria from the bovine uterus on endometrial epithelial cells

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A variety of pathogenic and commensal bacteria are found in the bovine uterus during the puerperium. It is hypothesized