20 min) and control group (group C). Analyses of samples were performed 0, 6 and 12 h after thawing. Motility and the viability (Viadent®) of the semen were analysed with Hamilton Thorne Biosciences, Version 12.3 and membrane integrity with HOS (hypoosmotic swelling test). Differences between groups were analysed with paired *t*-test. Percentage of motile spermatozoa was significantly higher in SLC group in comparison to group C respectively for 0 h ($p = 0.010$), 6 h ($p = 0.004$) and 12 h ($p = 0.003$). Analysis of viability also revealed significantly higher ($p \leq 0.001$) percentage of viable spermatozoa in SLC compared to group C respectively for all times. Percentage of HOS positive spermatozoa was also significantly higher in SLC compared to C group respectively for 0, 6 h ($p \leq 0.001$) and 12 h ($p = 0.002$). The results indicate high positive effect of SLC on quality of frozen-thawed ram spermatozoa.

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Bovine caruncular tissue shows immune competence *in vitro*

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The mechanisms of physiological release of the foetal membranes in cows are incompletely understood. We could show the participation of a local immune response in previous studies (Streyl et al. 2012), which presumably leads to an influx of immune effector cells into the intra partal placentome. We hypothesize that the maternal components of the placentome, namely the caruncular epithelium and caruncular stroma, fulfil an immunological function by recruiting leukocytes into the placentome. To test this hypothesis *in-vitro* the immune competence of bovine caruncular epithelial and fibrocyte cell cultures were investigated by stimulating the cell culture with LPS, a representative of the pathogen-associated molecular patterns (PAMPs) and hydrocortisol as classical immunosuppressive. The cell culture supernatants were used in transmigration assays to test the chemoattractive potency of the cells. mRNA expression was analyzed by qPCR. The stimulation of both cell types results in a significant increase of migrated PMNs in the transmigration assay and increased mRNA expression of e.g. IL8, CCL20 and TNFalpha. These results show the potential of maternal caruncular epithelial cells and fibrocytes to recruit leukocytes into the placentome. Clarifying the immunological competence of these cell types in the process of foetal membrane release will also lead to better understanding of the retention of the foetal membranes necessary to develop new therapeutic approaches in treating this disorder. (Supported by Pfizer Inc.)

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Prevalence of subclinical ketosis and relationships with postpartum diseases in European dairy cows

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There is a dearth of information on prevalence of subclinical ketosis (SCK) considering the diversity of European dairy farms. The objective of this study was to determine prevalence of SCK and relationships with postpartum diseases such as metritis, clinical ketosis (CK), displaced abomasum (DA) and lameness in European dairy farms. From May to November 2011 a convenience sample of 510 dairy herds from Croatia, Germany Hungary, Italy, Poland, Portugal, Serbia, Slovenia and Spain was studied. Blood β-Hydroxybutyrate (BHBA) was measured in a total of 5012 cows with a handheld meter within 2–15 days in milk and relevant information was recorded. Overall prevalence of SCK was 23.8% (14.8–36.6%) considering a threshold for blood BHBA ≥ 1.2 mM. Using receiver operator characteristic curve, blood BHBA thresholds ≥1.1, ≥1.3, ≥1.4 and ≥1.7 mM were determined for occurrence of lameness, CK, metritis and DA ($p < 0.01$). Plausible factors such as parity, effect of other diseases, herds, months and countries were tested in logistic models for disease of interest. The models demonstrated that cows with SCK have 1.5, 9.0, 5.3 and 1.8 times greater risk for development of metritis, CK, DA and lameness, respectively ($p < 0.01$). Overall, we concluded that prevalence of SCK is high in some European countries. Elevated BHBA within 2–15 days of milk is associated with an increased risk of metritis, lameness, CK and DA.

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Effect of egg yolk–based extenders on motile sperm population characteristics during goat sperm cryopreservation

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Our aim was to assess the replacement of fresh by pasteurized powered egg yolk on sperm motion characteristics, analysed by a computer-assisted sperm system (ISAS®). We also studied the profits of the fresh clarified egg yolk, by centrifugation of egg yolk twice at 10 000 × *g* for 45 min at 4°C, and the effect of the seminal plasma of young males on the motile sperm population. Briefly, fresh ejaculates from six bucks (1 year old) were collected by artificial vagina and immediately mixed in equal quantities. Pooled semen was split into two samples. One sample was washed by centrifugation (twice at 600 *g* for 10 min) and then the pellet was split into three equal aliquots and re-suspended in an extender containing 15% (v/v) of powered, fresh or fresh clarified egg yolk supplemented with 5% glycerol in a Tris-based media. The other semen sample was directly split into three equal aliquots and re-suspended in an extender containing 2% (v/v) of the same different type of egg yolk. Motility data were analyzed with the clustering procedure FASTCLUS, dividing the thawed motile sperm population in four separate subpopulations (SP), showing significant differences ($p < 0.01$) in their motion characteristics. The distribution of these subpopulations was similar (SP1 = 58.2%; SP2 = 10.6%; SP3 = 2.9% and SP4 = 28.4%; $p > 0.05$) between treatments, independently of their total motility, suggesting that the thawed motile sperm population shows similar behaviour in the different samples. Supported by INIA (RZ2009-00008-00-00), Generalitat de Catalunya (2009SGR0621 and CUR-DIUE) and FSE.

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The expression of steroid hormone receptors and inhibin-α in equine endometrial epithelial and stromal cells *in vitro*

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In vitro systems often lead to a loss of essential cellular properties. This could be evident in endometrial cells by a loss of steroid hormone receptors or regulatory proteins (e.g. inhibin-α) which are necessary for studies on cyclical changes or influences of steroids. The aim of this study was to examine oestrogen (ERα) and progesterone (PR) receptors and inhibin-α in cultured equine endometrial cells with special focus on the former endometrial cycle. This study includes all endometrial cycle stages of the mare (proliferation, secretion, physi-