

Reproduction in Domestic Animals

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Editor-in-Chief: Heriberto Rodriguez-Márquez

Proceedings of the 25th Annual Conference of the
European Society for Domestic Animal Reproduction (ESDAR)

28. September – 2. October 2022, Thessaloniki, Greece

Guest Editors: Constantinos Boscós and
Aristotelis G. Lymberopoulos

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Editorial

On behalf of the local organizing committee, I would like to invite you to join the 25th Annual Conference of ESDAR in Thessaloniki, Greece, 28 September–2 October 2022. The Annual ESDAR conference has been organized by many European countries since 1997, but this is the first time that Greece will host the 'ESDAR family'.

The scientific conference programme includes four plenary lectures by distinguished researchers, eight workshops which cover several species and a variety of interesting topics. From the submitted abstracts, 8 have been selected for the young scientists' competition, 32 have been selected for oral communications, and 105 are presented as posters. Although there will be a broad spectrum of basic research presented, we were also focusing on clinical (applied) scientific presentations. Main topics will be puberty, inflammation and infertility, obstetrics, gene editing, assisted biotechnology, cycle blockade, sperm quality and a special focus will be on mastitis.

Thessaloniki is the second-largest city in Greece, with over 1 million inhabitants in its metropolitan area, and the capital of the administrative region of Central Macedonia and the Decentralized Administration of Macedonia and Thrace. Thessaloniki is located on the Thermaikos Gulf, at the north-west corner of the Aegean Sea. It is bounded on the west by the delta of the Axios River. The city was founded in 315 BC by Cassandros king of Macedonia, who named it after his wife Thessaloniki, daughter of Philip II of Macedonia and sister of Alexander the Great. An important metropolis by the Roman period, Thessaloniki was the second-largest and wealthiest city of the Byzantine Empire. It was conquered by the Ottomans in 1430 and remained an important seaport and multi-ethnic metropolis during the nearly five centuries of Turkish rule. It passed from the Ottoman Empire to the Kingdom of Greece on 8 November 1912. Thessaloniki

exhibits Byzantine architecture, including numerous Paleochristian and Byzantine monuments, a World Heritage Site, as well as several Roman, Ottoman and Sephardic Jewish structures. The city's main University, Aristotle University, is the largest in Greece and the Balkans. The municipality of Thessaloniki, the historical centre, had a population of 325,182 in 2011, while the Thessaloniki metropolitan area had 1,030,338 inhabitants in the same year (2011). It is Greece's second major economic, industrial, commercial and political centre; it is a major transportation hub for Greece and south-eastern Europe, notably through the Port of Thessaloniki. The city is renowned for its festivals, events and vibrant cultural life in general and is considered to be Greece's cultural capital. Events such as the Thessaloniki International Fair and the Thessaloniki International Film Festival are held annually. In the 2014 was the European Youth Capital. In 2013, *National Geographic Magazine* included Thessaloniki in its top tourist destinations worldwide.

Enjoy the 25th Annual Conference of ESDAR which will give you the opportunity to meet colleagues from many other countries in a friendly atmosphere.

You are warmly welcome to this wonderful meeting in our lovely city. We are looking forward to seeing you here!

CONFLICT OF INTEREST

None of the authors have any conflict of interest to declare.

Constantinos Boscov
Aristotelis G. Lymberopoulos

2020. FPR was higher during the first 6–9 days in milk (DIM) for twin calved (TC) cows than for single calved (SC) cows at all lactations ($p < .001$; 1.41 vs. 1.35). Cox proportional hazard regression models revealed that primiparous and multiparous cows with FPR >2 on the 6–9 DIM had culling hazard (HR) 1.60, 95% CI 1.40–1.86, and HR 1.18, 95% CI 1.12–1.24, respectively, compared with respective cows with FPR 1–1.5 on the 6–9 DIM. Out of all, 5.8% of TC cows had FPR >2 on 6–9 DIM, compared to 3.0% of SC cows ($p < .001$). Highest number of cows were culled within the first 60 days after calving and for that period the survival rates of TC and SC cows were 0.81 and 0.91, respectively. In addition, time from calving to 1st insemination for SC cows with FPR >2 on 6–9 DIM was 89 and 85 days for reference group (FPR 1–1.5; $p < .001$), whereas the respective time intervals for TC cows were 93 and 85 days ($p < .001$). In conclusion, TC cows had higher culling risk than SC cows and monitoring FPR in early lactation can help to identify cows at most risk. Supported by Estonian Research Council grant (MOBJD678).

OC 5.4 | Neonatal weight and growth of purebred kittens

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The present longitudinal study focuses on weight of kittens from birth to 21 days of life. Kittens ($n = 153$) belonged to 38 litters of seven breeds (Maine Coon, Birman, British shorthair, Siamese, Bengal, Ragdoll, Abyssinian). Kittens were weighted daily for 21 days. Deaths were recorded ($n = 8/153$, 5.8%) and quartiles for weight at birth were calculated (Q1 49–93.4 g, Q2 93.5–105.9 g, Q3 106–116.9 g, Q4 117–148 g). Two-sample *t*-test and one-way ANOVA with Bonferroni's post hoc test were used to assess differences in weight and weight variations based on breed, sex, parity of the queens, neonatal mortality, and quartile. Breed influenced the weight at birth ($p < .05$), but not at day 21. Kittens of primiparous queens were smaller than those of pluriparous ones ($102.1 \text{ g} \pm 18.5$ and $109.1 \text{ g} \pm 18.5$, $p = .0008$). Gender did not influence weight at any time point. Neonates that died were smaller than survivors ($82.7 \text{ g} \pm 19.3$ vs. $106.1 \text{ g} \pm 17.4$, $p = .001$). No difference in weight variation was found in the first 48 h based on weight quartile at birth. However, weight gain was higher for kittens in Q1 at 7, 14, and 21 days compared to kittens in Q2, Q3 and Q4 ($p < .05$; variation in the first 21 days was $72.7\% \pm 4.5$ Q1, $67.4\% \pm 4.4$ Q2, $67\% \pm 4.8$ Q3, and $65\% \pm 4.4$ Q4). Significant differences in weight were found between all quartiles until 9 days ($p < .05$), but not between Q2 and Q3. At 21 days differences were found only between Q1 and Q3–Q4 and between Q2 and Q4 ($p < .05$). Smaller kittens grew faster and differences in weight tended to disappear in the first 3 weeks of life. Primiparous queens have smaller kittens compared to pluriparous ones. Breed differences in weight were found at birth, although this effect should be assessed on larger samples.

OC 6.1 | Virulence genes of *Escherichia coli* isolates from milk and vaginal swabs of sows associated with post-partum dysgalactia syndrome

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The aim of this study was to identify the presence of virulence genes of *Escherichia coli* (*E. coli*) isolates from vaginal and milk samples associated with post-partum dysgalactia syndrome (PDS) in farmed sows. Two hundred and two sows from five commercial pig farms were clinically inspected for PDS 12–24 h after farrowing. Sows were defined as PDS-affected (PDSA) if they showed pathological vulvar discharge or mastitis followed by one or more clinical signs such as fever, anorexia and altered piglet behaviour. Milk samples and vaginal swabs for bacteriological testing were taken from PDSA ($n = 47$) and PDS-unaffected (PDSU, $n = 155$). In total, 96 isolates of *E. coli* were tested by multiplex polymerase chain reaction (mPCR) for the presence of virulence genes related to specific pathogen strains. Virulence genes associated with extraintestinal pathogenic *E. coli* (ExPEC) were the most prevalent among all tested *E. coli* isolates (92.6%). The most dominant among all *E. coli* isolates was Type 1 fimbrial (*fimC*) gene (90.6%), with the prevalence of 92.38% in PDSA and 94.4% in PDSU sows. There was no significance in the prevalence of virulence genes in milk samples between sows. The increased serum survival (*iss*) gene was significantly more prevalent ($p < 0.05$) in vaginal swabs of PDSA sows compared to PDSU sows. The multivariable logistic regression model showed that lower parity sows and the presence of *iss* and heat-stable cytotoxin associated with enteroaggregative *E. coli* (*astA*) genes were correlated ($p < 0.001$) with the occurrence of PDS. Lower parity sows vaginally infected with *E. coli* associated with certain ExPEC strains are at higher risk of developing PDS. Sows with positive vaginal swabs for *E. coli* and *iss* gene early after parturition were associated with PDS.

OC 6.2 | Increased number of high-quality oocytes in antral follicles can determine higher litter size in two outbred high-fertility mouse lines

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Dummerstorf fertility lines FL1 and FL2 represent two mouse models of enhanced fertility characterized by doubling of the litter size compared to an unselected control population (Dummerstorf ctrl line) and might serve as bona fide animal models for pigs. Both FLs managed to reach this goal by increasing the ovulation rate per cycle, even showing irregular estrous cycle and unusual levels of some metabolic hormones connected with GnRH secretion [1]. The aim of the present study was to