

to that of a virus circulating in Tanzania in 2013. These data strongly indicate transboundary movement of lineage III viruses between Eastern Africa countries and have significant implications for surveillance and control of this important disease as it moves southwards in Africa.

## Current status and phenotypic characteristics of Bulgarian poultry genetic resources

*Teneva, A., Gerzilov, V., Lalev, M., Lukanov, H., Mincheva, N., Oblakova, M., Petrov, P., Hristakieva, P., Dimitrova, I., Periasamy, K.*

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Poultry biodiversity conservation is a great challenge for many countries. Within the last several years, the number of endangered local breeds has increased, leading to a considerable loss of genetic resources. A similar trend was observed among the poultry breeds, including chicken, local turkey and goose breeds/lines established in Bulgaria, part of which is definitely lost. Currently these breeds/lines are at risk and/or threatened with extinction. The information obtained by phenotypic characterization of these breeds is the first step for planning the management of poultry genetic resources through setting up improved selection schemes and conservation strategies. In this paper, we reviewed the current state of knowledge regarding the morphological and phenotypic diversity of local poultry breeds and some old productive poultry lines in Bulgaria.

## Environmental factors and dam characteristics associated with insulin sensitivity and insulin secretion in newborn Holstein calves

*Kamal, M.M., Van Eetvelde, M., Bogaert, H., Hostens, M., Vandaele, L., Shamsuddin, M., Opsomer, G.*

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The objective of the present retrospective cohort study was to evaluate potential associations between environmental factors and dam characteristics, including level of milk production during gestation, and insulin traits in newborn Holstein calves. Birth weight and gestational age of the calves at delivery were determined. On the next day, heart girth, wither height and diagonal length of both the calves and their dams were measured. Parity, body condition score and age at calving were recorded for all dams. For the cows, days open before last gestation, lactation length (LL), length of dry period (DP) and calving interval were

also calculated. The magnitude and shape of the lactation curve both quantified using the MilkBot model based on monthly milk weights, were used to calculate the amount of milk produced during gestation. Using the same procedure, cumulative milk production from conception to drying off (MGEST) was calculated. A blood sample was collected from all calves (n=481; 169 born to heifers and 312 born to cows) at least 5 h after a milk meal on day 3 of life to measure basal glucose and insulin levels. In addition, an intravenous glucose-stimulated insulin secretion test was performed in a subset of the calves (n=316). After descriptive analysis, generalized linear mixed models were used to identify factors that were significantly associated with the major insulin traits (Insb, basal insulin level; QUICKI, quantitative insulin sensitivity check index; AIR, acute insulin response; DI, disposition index) of the newborn calves. The overall average birth weight of the calves was  $42.7 \pm 5.92$  kg. The insulin traits were significantly associated with gender and season of birth when data of all calves were analyzed. In addition, the insulin traits in calves born to cows were significantly associated with MGEST, DP and LL. The Insb was estimated to be higher in calves born to the cows having passed a higher MGEST (P=0.076) and longer DP (P=0.034). The QUICKI was estimated to be lower in calves born to the cows having passed a higher MGEST (P=0.030) and longer DP (P=0.058). Moreover, the AIR (P=0.009) and DI (P=0.049) were estimated to be lower in male compared with female calves. Furthermore, the AIR (P=0.036) and DI (P=0.039) were estimated to be lower in calves born to cows having passed a longer LL. The decisive effects of MGEST, DP and LL in cows on the insulin traits of their calves may provide a basis for developing managerial interventions to improve metabolic health of the offspring.

## Evaluation of ovsynch protocols for timed artificial insemination in water buffaloes in Bangladesh

*Hoque, M. N., Talukder, A. K., Akter, M., Shamsuddin, M.*

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A total of 65 water buffaloes (groups A, B, and C) at  $\geq 60$  days postpartum with a body condition score (BCS) of  $\geq 2.5$  were selected to evaluate ovsynch protocols for timed artificial insemination (TAI). The group A buffaloes (n = 25) were treated with a simple ovsynch protocol (GnRH - Day 7 - PGF2 alpha - Day 2 - GnRH -16 h - TAI). The group B buffaloes (n = 22) received PGF2 alpha treatment 12 days before the initiation of simple ovsynch (PGF2 alpha at Day -12 + simple ovsynch; modified ovsynch). The group C buffaloes (n = 18) were treated with