The 10th International Conference on Agricultural and Biological Sciences (ABS 2024) & (ABB 2024) The 7th International Conference on Applied Biochemistry and Biotechnology

Abstract Proceedings

July 29 - August 1, 2024

Győr, Hungary

SZÉCHENYI EGYETEM
UNIVERSITY OF GYŐR

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relative expression in Shaziling sow indicated that the relative expression level of ACC mRNA related to fat synthesis in placental of HBT sow was significantly higher than that in NBT sow (P<0.05), the expression levels of LPL, HSL, and CPT-1 mRNA related to fat metabolism were significantly lower than that in NBT sow (P<0.01, P<0.05, P<0.0001). Dietary supplementary of RES can significantly increase CPT-1 mRNA expression (P<0.001). Relative expression levels of iNOS and FGF related to placental angiogenesis, SNAT1 related to animo acid transport, CD36 related to fatty acid transport were significantly lower in HBT sow (P<0.05, P<0.01, P<0.05, P<0.01). RES can significantly increase HIF-1α, VEGF-A, PlGF and FGF relative mRNA expression related to placental angiogenesis (P<0.01, P<0.05, P<0.0001, P<0.05). RES can significantly increase the relative expression levels of GLUT3 and GLUT4 mRNA related to placental glucose transport (P<0.001, P<0.05), SNAT2 and CAT-1 mRNA related to placental animo acid transport (P<0.05, P<0.01), FABPpm mRNA related to fatty acid transport (P<0.01). The fluorescence intensity of placental CD31 in HBT sow was significantly lower than that in NBT sow (P<0.01), which can be significantly increased by dietary supplementation RES (P<0.01). The fluorescence intensity of placental p-p50/p50 and p-p65/p65 in HBT sow were significantly higher than that in NBT sow (P<0.0001, P<0.0001), which related to placental inflammation status, were significantly decreased by dietary supplementation RES (P<0.001, P<0.0001). Given the significant differences between HBT and NBT sow mentioned above, and the significant regulatory effects on reproductive performance and placental function of RES on HBT sow, we further elucidated the protein expression related to angiogenesis in placenta using a high-fat mouse model. The relative protein expression of eNOS was significantly decreased under high-fat induction (P<0.001), which can significantly increase after supplementation of RES (P<0.05). And phosphorylation of PI3K, AKT, and mTOR was significantly reduced under high-fat induction (P<0.01, P<0.001, P<0.05), which can be increased by the supplementary of RES (P<0.05, P<0.05, P<0.05). The direct binding activity of RES to PI3K was measured by ex vivo pull-down assay and computational docking analysis, results showed that the binding rate of RES and PI3K reaches 70.2%, RES bound to the SH2 domain on the regulatory subunit P85 of PI3K, hydrogen bonds were formed between RES and Pro395, which can further improve the phosphorylation ability of PI3K. In conclusion, excessive backfat thickness of Shaziling sow had negative impact on reproductive performance, dietary supplementation of RES can improve reproduction performance by regulating genes expression of placental angiogenesis and nutrient transport. RES can directly bind to the PI3K protein, promote its phosphorylation, further increase the expression of downstream proteins of placental angiogenesis.

Keywords: Shaziling sow, Resveratrol, Placental function, Reproductive performance

Acknowledgements: This study were supported by the National Natural Science Foundation of China (U22A20515).

ABS4566: Influence of different storage temperature and duration on incubation traits, hatching performance and embryonic development in chukar partridge eggs

Mustafa Çam[1*], Mehmet Özbek[2], Zahit Kutalmış Kaya[3], Harun Karaca[2], Mahmut Şamil Şamlı[4], Serdar Güler[1], Neffel Kürşat Akbulut[5], and Kemal Kırıkçı[1]

[1]*Department of Animal Science, Selcuk University Veterinary Faculty, Konya, Turkiye*
[2]*Department of Histology and Embryology, Mehmet Akif Ersoy University Veterinary Faculty, Burdur, Turkiye*
[3]*Department of Plant and Animal Production, Necmettin Erbakan University, Konya Eregli Kemal Akman Vocational School, Konya, Turkiye*
[4]*Department of Animal Science, Hatay Mustafa Kemal University Veterinary Faculty, Konya, Turkiye*
[5]*Department of Obstetrics and Gynaecology, Necmettin Erbakan University Veterinary Faculty, Konya, Turkiye*
[*] *Corresponding author: mustafa.cam@selcuk.edu.tr, Tel.: +903322232702*

Abstract. The purpose of this study was to investigate egg traits during incubation, hatching performance and embryonic mortality of chukar partridge eggs under different storage duration and temperature conditions. A total of 640 eggs were allocated to equal two batches and stored for 7 and 14 days. The equal number of eggs for each storage time group were stored in 4 chambers with different temperatures (3, 9, 15 and 21 °C). After storage, 30 eggs from each subgroup were examined to determine stage of blastoderm development. The remaining eggs (50 eggs from each subgroup) were set into the same incubator and transferred to hatcher set on 21st day. All egg weight parameters (initial, before incubation, transfer), hatch weight and hatching parameters were recorded. The results indicated that weight loss during storage increases with extended duration, particularly above 9°C. Storage time didn't significantly affect hatch weight. Incubation periods were significantly longer for the eggs stored for 14 days compared the those stored for 7 days. Significant interactions between storage duration and temperature were noted for hatch weight and incubation time. Even though blastoderm development of the eggs stored at 21 °C were significantly at higher stages compared to other groups, almost all eggs from the treatment groups were below at gastrula stage. Mid-term embryonic mortality rate was significantly higher for the eggs stored at 21 °C and 7 days. The results suggested that chukar partridge eggs can be stored at temperature ranges from 3 °C to 21 °C without any significant negative effects. In the light of these results; further investigation into the effects of various storage temperatures under long-term storage period, particularly more than 21 days, is recommended to improve storage conditions and optimize hatching results in partridge eggs.

Keywords: Chukar partridge, Storage temperature, Storage period, Embryonic development, Hatchability, Embryonic mortality