SOCIETY FOR CRYOBIOLOGY

CRYO 2025

HANNOVER

ABSTRACTS

CRYO2025 HANNOVER JULY 22-25

VP6 EVALUATING AFPI SUITABILITY TO ENHANCE POST-THAW FERTILITY IN NATIVE CHICKEN SPERM

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Sperm from indigenous breeds of chicken often exhibit increased sensitivity to cryoinjury, making them good models for optimizing cryopreservation protocols. The present study evaluated the effect of AFPI on the cryoresistance of sperm from the native breed Yellow Hungarian (YH). Pooled semen (10 pools/15 animals per pool) was frozen (dilution rate 1:3, 0.6M DMA, equilibration 1h at 5 °C, package 0.5 mL straws, cooling rate -100 °C/min) following supplementation of AFPI (1µg/mL). In order to discard changes in fertility induced by the presence of AFPI, control artificial inseminations (AI) (4, twice weekly), with non-frozen semen, were performed in 5 groups using: A (neat semen), B (A, extended in ASG, chilled 1h 5°C), C (B+DMA), D (B+AFPI) and E (B+DMA+AFPI). Sperm parameters and fertility were analysed using ANOVA with Tukey's test and the Chi-square test, respectively. Fertility rates obtained were 48.2%, 3.7%, 31.4%, 21.4% and 16.1%, respectively. There was a serious decrease in fertility of sperm chilled in ASG diluent alone (3.7%,) compared to neat semen (48.2, $p<0.001$). On the other hand, semen containing DMA, AFPI or AFPI-DMA showed higher fertility than B ($p<0.005$), indicating they play a protective role. Sperm frozen with AFPI-DMA resulted in higher proportion of sperm with intact DNA (70.2±4.6 vs 49.1±4.5, $p<0.05$); however, AI (8 in three weeks) gave only 1.5% of fertility rate. It is important to consider that the fertility reported by AI using the combination AFPI-DMA in non-frozen semen represented only one third of the fertility obtained with NS, indicating that 2 thirds had already been lost during the cooling/chilling phase. Therefore, the low fertility rate obtained with F/T semen is not surprising. AFPI showed a partial protective role to avoid fertility loss induced by cooling/chilling; however, reducing this loss is necessary to properly evaluate the role of AFPI during freezing itself.

Funding: European Union HORIZON-MSCA-2022-PF-01, Project-101109983-CRYOCHICK/ Ministry of LVVN, project KB-34-013-002
Conflict of Interest: None to disclose
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