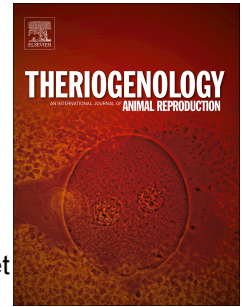


# Accepted Manuscript

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PII: S0093-691X(18)30785-4

DOI: [10.1016/j.theriogenology.2018.09.009](https://doi.org/10.1016/j.theriogenology.2018.09.009)

Reference: THE 14694

To appear in: *Theriogenology*

Received Date: 1 February 2018

Revised Date: 11 September 2018

Accepted Date: 11 September 2018

Please cite this article as: Zahid Naseer, Ejaz Ahmad, Hande Sultan Şahiner, Erkmen Tuğrul Epikmen, Muhammad Fiaz, Muhamad Rizwan Yousuf, Shahzad Akbar Khan, İlker Serin, Ahmet Ceylan, Melih Aksoy, Dietary quercetin maintains the semen quality in rabbits under summer heat stress, *Theriogenology* (2018), doi: 10.1016/j.theriogenology.2018.09.009

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## **Dietary quercetin maintains the semen quality in rabbits under summer heat stress**

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**Running title:** Quercetin protects rabbit sperm against heat stress

### **ABSTRACT**

This study focused to determine beneficial impact of feeding quercetin supplemented diet on semen quality in summer heat imposed rabbits. Twelve heat stressed (HS) adult rabbits bucks were either fed with basal diet (HS;  $n = 06$ ) or quercetin supplemented diet (QU-HS;  $n = 06$ ) for a period of 56 days. Semen samples were collected and evaluated for volume, osmolality, morphology, concentration, motility, motion kinetics, viability, acrosome integrity, mitochondrial potential, and seminal plasma MDA level. Semen volume, concentration, motility and sperm kinetics parameters were affected by diet supplementation. Diet affected the sperm mitochondrial potential and day of treatment affected the viable sperm percentage, whereas, there was an effect of diet, day of treatment and diet by day interaction ( $P < 0.05$ ) on acrosome reaction rate. Sperm head abnormalities were influenced diet provision, sperm mid-piece abnormalities were affected by diet and day of treatment, whereas, a diet effect and

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