

Effect of Oral Zinc Sulfate Supplementation on Canine Semen Quality

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Abstract This study was conducted to evaluate dosage and effect of zinc sulfate (zinc) on semen quality in dogs. Eight dogs (2-6 years old) were divided into two equal groups; 5 and 10 mg/kg/day of zinc were given orally twice daily for 60 days. Semen was collected 3 times before and another 4 collections 14 days apart after zinc supplementation to evaluate semen quality on motility, viability, semen concentration and sperm morphology. The results showed that 4 dogs treated with 5mg/kg/day zinc dose showed significantly higher percentage of motility ($59.0\pm 3.6\%$ and $69.5\pm 2.9\%$) and normal sperm morphology ($78.7\pm 3.5\%$ and $91.3\pm 1.7\%$) when compared to before treatment ($P<0.05$). Another 4 dogs treated with 10 mg/kg/day zinc dose showed significant higher percentage of viability ($88.5\pm 4.4\%$ and $95.7\pm 1.4\%$), sperm concentrations (205.1 ± 17.7 and $285.7\pm 19.4 \times 10^6/\text{ml}$) when compared with before treatment ($P<0.05$). Percentage of motility and sperm concentrations of high dose of zinc were higher than low dose, which were $78.5\pm 2.8\%$, $285.7\pm 19.4 \times 10^6/\text{ml}$ and $69.5\pm 2.9\%$, $213.7\pm 23.6 \times 10^6/\text{ml}$ for 10 and 5 mg/kg/day zinc dose respectively ($P<0.05$). However, when compared both doses with other parameters of sperm quality, there was no significant difference. In conclusion, zinc supplementation could improve dog's semen quality with dosage 5 - 10 mg/kg/day twice daily continuing for 60 days.

Keywords: zinc sulfate, semen quality, dosage, dog, oral supplementation
