

Selenium form – impact on bioavailability and fertility in dogs

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Objective: To compare selenium sources (Sel-Plex® vs. selenite) on seminal traits, antioxidant status and reproductive performance in dogs.

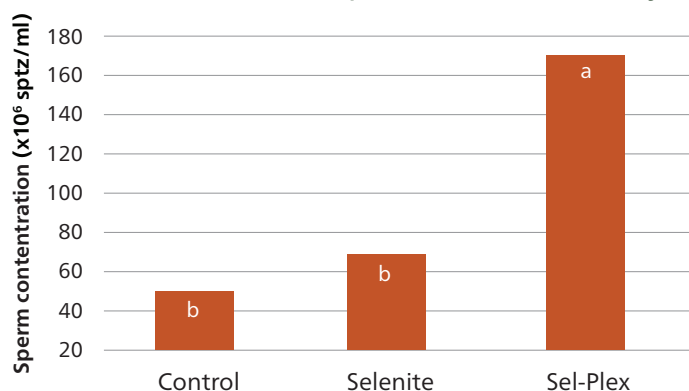
Experimental Design:

Duration:	80 days	Breed:	Beagle
Treatments:	1) Control – 0.11 ppm total Se 2) 0.2 ppm inorganic sodium selenite resulting in 0.3 ppm total Se 3) 0.2 ppm Sel-Plex resulting in 0.3 ppm total Se		

Important observations

- By the end of the trial period, sperm production was significantly higher (167.1×10^6) than the inorganic (64×10^6) and control treatment (49.8×10^6) (Figure 1).
- Sperm number was also significantly higher in the Sel-Plex fed group compared to the control at 504.1×10^6 vs. 228.1×10^6 (Figure 2).
- Sel-Plex fed dogs had significantly lower total sperm abnormalities compared to the control at 19.1% vs. 39.4%.
- Sperm membrane integrity was significantly higher than the inorganic and control at 96.2%, 85.3% and 86.4% respectively.
- Sel-Plex fed dogs also had the least percentage of damaged sperm membranes at 3.8% ($P < 0.05$) followed by selenite (14.7%) and the control (13.6%).

Figure 1: Effect of selenium source on sperm concentration ($\times 10^6$ spz/ml) after 80 days



^{a, b} Values differ significantly ($P < 0.05$)

Figure 2: Effect of selenium source on sperm number ($\times 10^6$ spz/ml) after 80 days

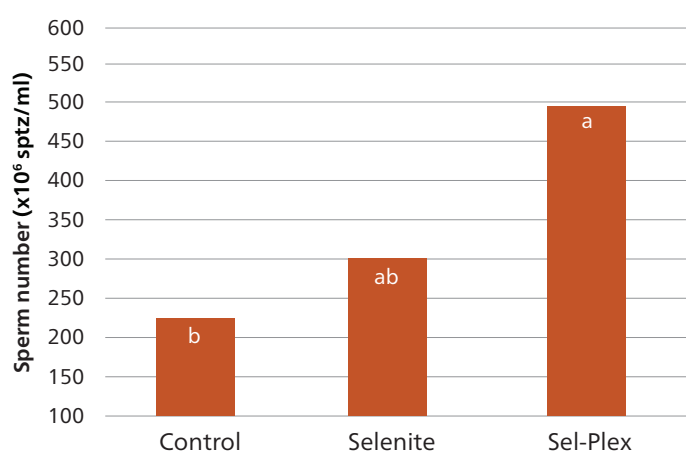
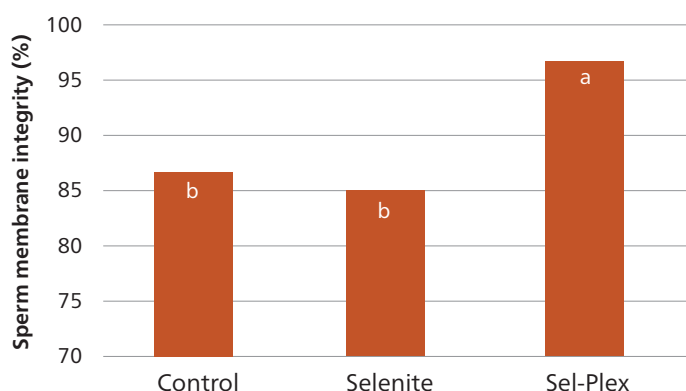


Figure 3: Effect of selenium source on sperm membrane integrity (%) after 80 days



Conclusion

Sel-Plex improves the seminal plasma traits of dogs, and therefore reproductive performance. This could potentially be linked to Sel-Plex being more rapidly absorbed compared to inorganic sodium selenite.