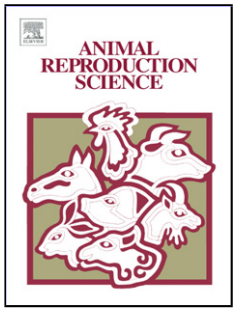

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PII: S0378-4320(18)30027-7
DOI: https://doi.org/10.1016/j.anireprosci.2018.04.004
Reference: ANIREP 5819

To appear in: *Animal Reproduction Science*

Received date: 8-1-2018
Revised date: 17-3-2018
Accepted date: 5-4-2018

Please cite this article as: Smith AMJ, Bonato M, Dzama K, Malecki IA, Cloete S, Mineral profiling of Ostrich (*Struthio camelus*) seminal plasma and its relationship with semen traits and collection day, *Animal Reproduction Science* (2010), https://doi.org/10.1016/j.anireprosci.2018.04.004

Mineral profiling of Ostrich (*Struthio camelus*) seminal plasma and its relationship with semen traits and collection day

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ABSTRACT

Successful assisted reproduction techniques, with specific focus on *in vitro* semen storage for artificial insemination, are dependent on certain key elements which includes the biochemical profiling of semen. The objective of this study was to complete an ostrich seminal plasma (SP) evaluation by inductively coupled plasma mass spectrometry (ICP-MS) among seven males at different daily intervals (day 1, 3, 7, 11, 15, 19, 21, 23, 25, 26, 27, 28) for a period of 28 days during spring (August to September) for mineral profiling. The effect of collection day and male on sperm concentration, semen volume and seminal plasma volume, was explored as well as the relationships amongst these specific sperm traits and SP minerals. Variation amongst SP mineral concentrations, accounted for by the fixed effects of sperm concentration, semen volume, seminal plasma volume, collection day and male, ranged from 18% to 77 %. Male had the largest effect on variation in SP minerals, namely: phosphorus (P), potassium (K), calcium (Ca), sodium (Na), boron (B), iron (Fe), cobalt (Co), nickel (Ni), copper (Cu), molybdenum (Mo), barium (Ba), arsenic (As) and selenium (Se). Sperm concentration instigated fluctuations of P, magnesium (Mg), B, zinc (Zn), Fe, aluminium (Al), Se, manganese (Mn) and lead (Pb). Semen volume had an effect on Na,