Title: Predicting ejaculate quality and libido in male ostriches: Effect of season and age

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The success of artificial breeding program depends largely on the reproductive performance of males. Male performance can vary with season and age impacting on quality and quantity of semen collected for artificial insemination purposes and therefore fertility of inseminated females. We examined variation in semen output and male libido of seven male ostriches (aged 2–5 years) over a period of 24 months. We collected ejaculates using a dummy female and measured semen characteristics (ejaculate volume, sperm concentration, number of spermatozoa per ejaculate, sperm motility and morphology) and male libido (willingness to mount the dummy). A total of 1006 ejaculates were collected. Across months, the volume of semen (mean ± SEM) ranged from 1.03 ± 0.12 mL to 1.85 ± 0.07 mL, the sperm concentration from 3.21 ± 0.12 × 10⁹/mL to 4.16 ± 0.74 × 10⁹/mL, and the number of spermatozoa from 3.42 ± 0.28 × 10⁹ to 7.66 ± 0.47 × 10⁹. The largest volume of ejaculates and the highest number of sperm were collected in spring. Ejaculates with higher number of normal sperm were also collected in spring – early summer, whereas ejaculates with higher numbers of live abnormal and dead sperm were collected in winter. Sperm motility was relatively constant over months, despite a reduction in summer (January–February), while male libido peaked in winter (June–July) and spring (October–November). Furthermore, we observed high individual variation between males for all variables tested, except for motility. These results indicate that collections conducted in spring yield higher number of spermatozoa, when the libido of males is also at a maximum. Therefore in this species seasonal variation in semen quality should be considered in breeding programmes by artificial insemination to maximise fertility.

Keywords: semen quality, artificial insemination, Struthio camelus, poultry

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