

Socio-sexual behaviour and fertility

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Reproductive behaviours play a fundamental role in evolution by determining variation in individual fitness, and thus represent a key determinant of population dynamics, with critical implications for the fertility, production and welfare of livestock including poultry.

While the importance of behaviour in poultry production is increasingly appreciated, we are only beginning to appreciate the complexity of the strategies affecting the reproductive outcome.

This contribution will review recent advances in the study of social and sexual mechanisms modulating fertility and reproductive success in fowl flocks. An evolutionary framework is utilised to better understand the significance of male and female strategies.

The reproductive outcome in fowl populations is regulated through a hierarchy of mechanisms spanning episodes leading up to mating and following mating. These mechanisms range from iterated social interactions among partners and same sex competitors to the protracted interactions of rival ejaculates within the reproductive tract of a hen, and collectively affect the probability that individual ova are fertilised by the sperm of individual males. Experimental studies in more natural populations, such as populations of red junglefowl, the species which contributed to the rise of the domestic chicken, have been particularly helpful in providing a benchmark repertoire of behaviours to illuminate patterns emerging from commercial flocks and inform future management and husbandry practices.

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