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Session 13

Day and night sexual activity of rams as recorded by an automatic heat detector

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The objective was to analyse the day and night-time sexual behaviour of Mérimos d'Arles rams reared under extensive farming conditions. Eight rams were evaluated in their interaction with the ewes (ratio 1♂:40♀) during two consecutive years at the timing of the reproductive period from late April to early May. An automatic heat detection device, already validated in such conditions, was used to monitor the timing and number of mounts for each ram. Data were analysed within two distinct periods i.e. daytime 14 h (from 6 a.m. to 8 p.m.) and nighttime 10 h (from 8 p.m. to 6 a.m.). Means were compared using Tukey's HSD test. Results show that all rams kept a nocturnal sexual activity. The circadian rhythm of ram activity differed from one animal to another ($P < 0.05$). One ram displayed 11 ± 6 and 36 ± 25 mounts/h during the night and day, respectively (corresponding to 23 and 77% of its daily activity averaging 25 ± 18 mounts/h). Conversely, another ram displayed 65% of its activity during the night (13 ± 9 mounts/h). No correlation was observed between total daily and diurnal sexual activity ($P > 0.05$). Within a same year, the total mounting activity between rams was significantly different ($P < 0.001$) and ranged from 1.9 to 89.8 mounts/h. Between years, the total number of mounts for each ram was significantly different ($P < 0.01$) but this did not affect the ranking among rams based on this criteria (repeatability 83%; $P < 0.05$). Our results suggest that sheep, often classified as diurnal animals in their sexual behaviour, may display a significant nocturnal activity which must be taken into account. We can conclude that studying the animal only during the daytime may lead to a lack of information and/or efficiency in the management of reproduction. In this context, the automatic heat detector developed by our team may be an effective and easy-to-use alternative tool for studying ram reproduction behaviour.