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WHELPING SEASONALITY AND INFLUENCE OF MOTHER'S AGE ON LITTER SIZE OF THE MANNARA DOG

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The reproductive cycle of domestic dogs is generally considered non-seasonal and not limited to a specific time of year, purportedly driven by selective pressures for increased fecundity and the continuous availability of food. Nevertheless, annual peaks in reproductive activity have been reported in some breeds (1). For this study, we collected the available data on the reproductive physiology of an ancient local Italian breed, the Sicilian Mastiff commonly called Mannara dog, officially recognized by the Italian Kennel Club (ENCI) only in 2014, and which today numbers around 700. Data were collected on the mating of 82 bitches in the only time interval officially known from the ENCI herd books (2015-2023). In this period 497 pups were whelped, with a mean bitch age at first whelping of 28.0 ± 17.0 months and a mean litter size of 3.90 ± 2.12 . The birth month of the bitches showed a significantly higher frequency in March compared to June, July, October, November, and December ($P < 0.05$), a similar pattern was observed for whelping periods. Notably, maternal age had a significant impact on litter size: each additional month of age resulted in an approximate one percent reduction in pups ($P < 0.001$). No influence of month on litter size or sex ratio was found. Consistent with the *Canis lupus* reproductive

peak between March and June (2), these results suggest the Mannara breed's ancient genetic history influences its reproductive seasonality, potentially a vestige of the wolf's stricter seasonality. These data align also with findings in the Cirneco dell'Etna (3). Despite the small sample size, the photoperiods and climatic conditions of breeding of the studied subjects were similar, making the sample homogeneous for environmental variables. Therefore, breed and latitude characteristics, including genetic predispositions and daylight hours, must be considered when studying *Canis familiaris* reproductive patterns.

References

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