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ABSTRACT

Effects of service number on conception rate in Japanese Black cattle

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First published: 12 August 2017
https://doi.org/10.1111/rda.13049
Cited by: 1

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The conception rate (CR) of Japanese Black cattle has been decreasing since 1990. The objectives of this study were to compare CR by artificial insemination (AI) number, and to assess the interaction between AI number and possible factors related to CR in Japanese Black cattle. Records of 11,182 AI records for 6,741 heifers and 61,302 AI records for 13,139 cows on 977 farms were analysed. The average CR of heifers was 47.0%, and CR at the first, second and third AI was higher than at the fourth or subsequent AI ($p < 0.05$). The average CR of cows was 47.8%, and their CR at first and second AI was higher than the fourth or subsequent AI ($p < 0.05$). Data analysis with CR as the dependent variable revealed significant interactions of AI number with interval from calving to first AI and AI season. Cows first serviced at ≤48 days post-partum had lower CR than those at ≥90 days at first AI ($p < 0.05$), but the interval from calving to first AI did not affect CR at second AI. Cows serviced in the autumn had a higher CR at first AI than those serviced in the spring and winter ($p < 0.05$); however, there was no seasonal difference in CR at the second AI. In summary, CR began to decrease from the fourth AI in heifers and the third AI in cows. The AI season and the interval from calving to first AI significantly affected CR only at the first AI.

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