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Relationships between growth and body condition development during the rearing period and performance in the first three lactations in Holstein cows

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https://doi.org/10.17221/8460-CJAS

Citation: Vacek M., Krpálková L., Syrůček J., Štípková M., Janecká M. (2015): Relationships between growth and body condition development during the rearing period and performance in the first three lactations in Holstein cows. Czech J. Anim. Sci., 60: 417-425.

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The relationship between growth and development of body condition during the rearing of replacement heifers and their subsequent performance in the production period of Holstein cows in the Czech Republic was studied. The data set used in this study covered 733 Holstein heifers born on one farm during the years 2004–2009. The evaluated effects considered were body weight (BW), average daily gain of live weight (ADG), and body condition score (BCS) of heifers. The results demonstrated the desirable effect of the higher achieved ADG in the period before sexual maturity on the lower age at first calving (AFC), the positive influence on milk yield in the first lactation, and the negative relationship to the conception rate of heifers before first calving. Similar effects were also found for growth in the period of 9–12 months of age. In heifers with a greater growth rate before puberty there was not a significant risk of excessive BCS during the breeding period. Heifers with the highest BCS (3.5 points (p.) and more) at 14 months of age had significantly the lowest milk yield in the first and second lactation compared to heifers with medium (3.5 p.) and low (3.25 p. or less) BCS. Over-conditioned heifers exhibited higher milk protein content in the first and second lactation. No effects on the third lactation were observed.

Keywords:

average daily weight gain; body condition score; heifer performance; dairy cows

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