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**The effect of dairy calf housing on level of their welfare**

G. Mala\*, P. Novak, P. Jiroutova, J. Knizek, E. Nejedla, D. Prochazka, M. Koci

\*lead presenter

mala.gabriela@vuzv.cz, Institute of Animal Science, Czech Republic

**Abstract:**

**Background/Objective:** [The housing un-weaned dairy calves is one of the most important factors affecting their health, growth and future performance. The aim of this study was to evaluate the effect of three different housing systems on dairy calf behaviour, health and growth.]

**Methods:** [Two-year study was performed in 160 Holstein calves (from birth to 60 days of age) which were placed in the individual pens immediately after their birth. At the age of 31 days were 64 calves housed individually, 64 calves in pair and 32 calves in group on fours. Calves and starter-feed were weighed in weekly intervals, health were recorded daily. Behavioral activities were analyzed in 24-hour cycles weekly. The qualitative parameters (health, behaviour) were evaluated by non-parametric Kruskal-Wallis ANOVA, quantitative parameters (live weight, weight gain, starter intake) using ANOVA for repeated measurements in the TIBCO Statistika software package.]

**Results:** [The group housed calves were more active compared to the calves housed in pair (by 4.16%) or individually (by 5.35%) and had the higher cross-sucking occurrence (1.38% of daily time), whereas in the individually housed calves was higher frequency of non-nutritive sucking (4.55% daily time). The calves reared in a group spent a significantly higher amount of time in individual and social play. A significantly higher starter intake (by 5.8 kg) by group reared calves resulted in higher weaning weight (by 2.8 kg) and weight gain (by 2.4 kg) compared to calves reared in the pairs. A non-significantly higher occurrence of diarrheal and respiratory diseases was found in calves in the group.]

**Conclusion:** [Small groups of housing calves create the prerequisites for allowing natural behaviour (higher space allowance, sufficient time to rest and feed and reducing the occurrence of food competition) as a basis for maintaining an adequate level of welfare.]

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**Keywords:** [calves, housing, behavior, health, growth]