

Session 11: Recent developments in genomic evaluations: New traits, new populations. Chairs: Andrew Cromie, María Jesús Carabaño

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### **GENETIC PARAMETERS AND SINGLE STEP EVALUATION OF SEXUAL PRECOCITY TRAITS IN CHAROLAIS BEEF CATTLE**

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Breeding a cow is an expensive process, especially due to its nonproductive period. Hence, decreasing the age at first calving may reduce the latter and improve economic efficiency of beef farms. Since 2018, a French network of 15 Charolais farmers gathered within a project called "FERTI38", led by CHAROLAIS UNIVERS, equip their cows with neck tags (HEATIME® - MSD Animal Health Intelligence) to monitor cows behavior. The collar collects hourly information as rumination, activity, eating time enabling detection of heat and health events. The latter are added to calving and pregnancy diagnosis information. Last, farmers are involved in validating the data collected, and recording additional information on tag replacement and cow management practices. These data were completed by insemination, gestation datasets and genotyped information. The goals of this project is to estimate genetic parameters of traits related to sexual precocity and reproductive traits in order to implement them in a single step evaluation. A dataset of 781 females with performances recorded was used. The mean age at first "Heat" was 14.8 months ranging from 8.6 months to 20.4 months. The heritability obtained for this trait is 0.36 with a standard error of 0.12. These results were implemented in a private single step evaluation to estimate EBVs and reliability using HSSGBLUP software. The EBVs were standardized to obtain a mean of 100 and 10 points corresponding to a genetic standard deviation (21.6 days). For the 25 bulls evaluated with reliability higher than 0.30, EBVs ranged from 85 and 113 and the mean reliability is 0.52 with a maximum of 0.76.

