

931 Sequential evaluation of longitudinal conformation data in dairy cows. N. Gengler*^{1,2}, S. Vanderick¹, and C. Bastin¹, ¹University of Liège - Gembloux Agro-Bio Tech, Gembloux, Belgium, ²National Fund for Scientific Research, Brussels, Belgium.

Current genetic evaluation for Holstein type data in the Walloon Region of Belgium is based on a multi-trait animal model for repeated data and missing traits using a transformation based on multiple diagonalization. Currently used data covers 33 traits observed in all lactations if at least one classification was done for a given cow before it was considered mature. A total of 102,875 records were available for first parity and 30,378 records for second or later parities in January 2010. With a total of 117,013 classified cows, the number of repeated records was 16,240, with repetitions within and across lactations. Based on a request from the field and to make better use of available longitudinal data along an age at classification gradient, research was performed to develop an adapted model. In this study a random regression model was developed that was equivalent to a multi-lactation (first vs. later) model allowing repeated classifications inside parity but with some fixed effects spanning across parities. The random regressions were defined as constant and linear regressions on parity number -1. A 2 step approach was developed, for solving and variance components estimation. In this approach, a model based on the current genetic evaluation model modified to host single-trait random regressions was the first step. The second step consisted in the joint multiple-trait analysis of the meta-data (regression coefficients) provided by the first step. The proposed approach has very interesting potential for the analysis of data with large numbers of traits as trait reduction techniques can be integrated in the procedure.

Key Words: type traits, equivalent model, sequential evaluation

932 Fitness of Boer, Kiko, and Spanish does managed on humid, subtropical pasture in central Tennessee. R. Browning Jr.*¹ and M. L. Leite-Browning², ¹Tennessee State University, Nashville, ²Alabama A&M University, Huntsville.

Records for Boer (n = 132), Kiko (n = 92), and Spanish (n = 79) does across 6 yr of production were processed to assess doe fitness traits

among meat goat breeds when managed on southeastern US pastures. Does were mated in a complete 3-breed diallel each fall for spring kidding. A total of 1042 doe-yr units were observed with does ranging from 2 to 8 yr of age and managed together in a semi-intensive manner. Herd health records were analyzed for each production year. Does were treated for foot scald and foot rot upon observed lameness. The herd was not vaccinated for foot rot. Breeds differed ($P < 0.01$) for lameness cases treated during the year. Boer required more ($P < 0.01$) treatments for lameness (1.8 ± 0.1 cases/doe) than Kiko (0.6 ± 0.1 cases/doe) or Spanish (0.9 ± 0.1 cases/doe). A larger ($P < 0.01$) proportion of Boer required single ($75 \pm 5\%$) or multiple foot treatments ($49 \pm 4\%$) annually compared with Kiko ($36 \pm 5\%$; $17 \pm 4\%$) or Spanish ($45 \pm 5\%$; $24 \pm 4\%$). Does received a tactical anthelmintic treatment at parturition. Individual does presenting clinical symptoms of endoparasitism during the year received need-based treatment. Breeds differed ($P < 0.01$) for need-based anthelmintic treatment. Need-based dewormings were more numerous for Boer (0.8 ± 0.1 cases/doe) than for Kiko (0.4 ± 0.1 cases/doe) or Spanish (0.3 ± 0.1 cases/doe). A larger ($P < 0.01$) proportion of Boer required single ($53 \pm 4\%$) or multiple need-based dewormings ($23 \pm 4\%$) per year compared with Kiko ($26 \pm 4\%$; $4 \pm 3\%$) or Spanish ($23 \pm 3\%$; $7 \pm 2\%$). Fecal egg counts to assess endoparasite loads 3 mo postpartum were higher ($P < 0.01$) for Boer dams (660 eggs/g) than for Spanish dams (362 eggs/g); Kiko dams were intermediate (500 eggs/g). A smaller proportion ($P < 0.01$) of Boer does weaned 3-mo-old kids ($49 \pm 3\%$) and stayed in the herd ($64 \pm 3\%$) annually compared with Kiko ($78 \pm 3\%$, $85 \pm 2\%$) and Spanish does ($77 \pm 3\%$, $84 \pm 2\%$). Significant differences were evident among meat goat breeds for doe fitness under southeastern US pasture conditions.

Key Words: meat goats, breed, fitness