

ANIMAL WELFARE AND RESILIENCE – P001

P001

Genetic parameters of temperament traits in Marchigiana, Chianina and Romagnola young bulls

Fiorella Sbarra^a, Andrea Quaglia^a, Giovanni Bittante^b, Roberto Mantovani^b

^aAssociazione Nazionale Allevatori Bovini Italiani da Carne, A.N.A.B.I.C., Perugia, Italy

^bDipartimento di Agronomia, Animali, Alimenti, Risorse naturali e Ambiente, University of Padova, Padova, Italy
Contact sbarra@anabic.it

Temperament has been defined as the reactivity or fear response to human's interaction or novel environments and it is a welfare indicator. Temperament is a complex phenotype often evaluated by measuring behavioural traits affected by genetic, environmental factors, and their interaction. This study aimed to estimate genetic parameters for temperament collected in Marchigiana (M), Chianina (C) and Romagnola (R) bulls under performance test (PT). Data of 445 bulls were used (159 of M, 142 of C and 144 of R) each one accounting for 12 traits recorded during 4 phases of PT. The 1st phase (1p) was at the end of quarantine and 4 temperament traits were recorded by scoring animals' reaction at the entrance into the paddock, the technician approach, touches, and the return into the pen. The 2nd and 3rd (2p and 3p), coincident with first and last weighing provided to score reaction at the entrance, staying and exit to the weighing cage. At the 4th phase (4p) behaviour during body measurements and halter attachment were obtained. All traits were scored by a single operator using a 1–4 scale system, e.g. from submissive to indocile. A general greater frequency of class 4 (indocile) on almost all traits was observed in R as compared to the other two breeds. In 1p the entrance into the paddock led to a 16.7% of incidence for class 4 in R, while M and C showed 1.9% and 4.9%, respectively. In 2p the young bulls from R still reported a higher incidence of class 4 than the other two breeds. Differences between breeds could be linked also to the breeding system at the farm, considering that R bulls had a higher incidence of loose housing and pasture system than other breeds. The GLM showed the significance of 3 main non-genetic factors, that is breed, breeding system and contemporary group. All effects included in the final model used to estimate genetic parameters under a single-trait animal model-REML accounting for 9289 animals in the pedigree file. Heritability estimates resulted in variable among traits analysed, ranging from very low (0.04) to high values (0.57) with a tendency to be reduced in subsequent phases, probably due to animal settling to environmental condition. Indeed, in the 1p heritability ranged from 0.05 to 0.57, in the 2p from 0.04 to 0.44, in the 3p from 0.16 to 0.34, and in the 4p from 0.20 to 0.23. We conclude that temperament of young bulls measured during the PT shows some genetic components although affected over time by rearing environment.

P002

Does the presence of weeping teats affect behaviour, health and productivity of dairy goats?

Silvana Mattiello^a, Renata Piccinini^b, Stefano Biffani^c, Giovanni Bailo^a, Monica Battini^a, Giulietta Minozzi^b

^aDipartimento di Scienze Agrarie e Ambientali, University of Milan, Milano, Italy

^bDipartimento di Medicina Veterinaria, University of Milan, Milano, Italy

^cIstituto di Biologia e Biotecnologia Agraria (IBBA), Consiglio Nazionale delle Ricerche (CNR), Milano, Italy
Contact silvana.mattiello@unimi.it

Goat's udder occasionally presents a congenital abnormality called 'weeping teats' that causes micro-lacerations in the mammary epithelial tissue, with subsequent milk leakage. As a precaution, animals with this pathology are excluded from herds. However, little is known about the consequences of this abnormality on goats' welfare and health. The present investigation was carried out to evaluate the effect of the presence of weeping teats on production, discomfort behaviour during milking and udder health in dairy goats. In order to highlight possible signs of discomfort or pain, we carried out behavioural observations during milking on 23 Alpine goats (11 with weeping teats [WP], 12 controls with normal teats [C]) at the beginning, in the middle and at the end of lactation. Additionally, four milk samples were collected from each teat of each animal and submitted to microbiological analysis and somatic cell count (SCC). Productive data were provided by the local farmers' association (APA). No differences between groups were observed for discomfort behaviours (detach or attempts to detach the milking cluster, urinating, defecating, kicks, attempts to escape), or for other behaviours that may indicate positive emotional state (tail up) or excitement (tail wagging). The duration of milking was longer in C than in WP goats, with significant differences at the beginning of lactation (C: 142.78 ± 13.04; WP: 98.63 ± 5.04 sec; $p < .05$; Kruskal–Wallis test). However, these differences are probably due to individual variation, rather than to the presence of weeping teats or to the production level, given the fact that milk production did not statistically differ between groups (C: 682.00 ± 26.59; WP: 715.82 ± 31.78 kg/head/year; n.s.; Kruskal–Wallis test). No contagious microorganisms were found in milk samples from both groups. However, WP goats showed a higher proportion of teats positive to microorganisms (mainly *Staphylococcus* spp) (C: 15.6%; WP: 46.9%; $\chi^2 = 5.8909$; $p = .015$).

Our results suggest that the presence of weeping teats does not affect productivity and does not cause pain or discomfort to dairy goats. However, some concerns arise for udder's health, but further studies on a larger sample are required to confirm these preliminary findings.