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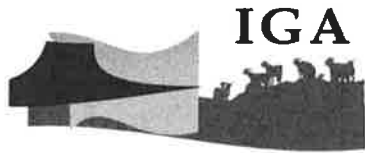
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Response to a divergent selection based on somatic cell counts in Alpine dairy goats

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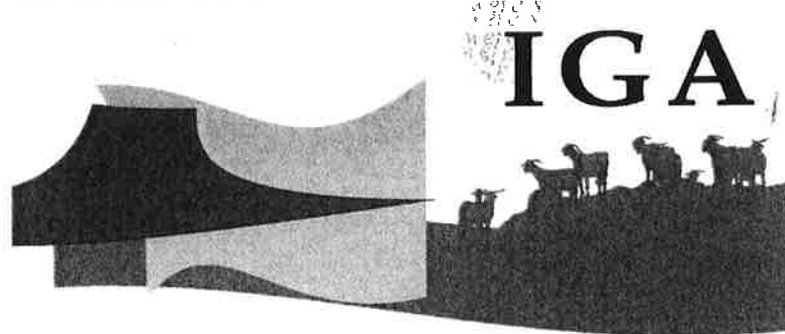
Milk somatic cell count (SCC) is routinely collected in the French Alpine and Saanen dairy breeds and its heritability has been estimated to be around 0.20. Accordingly, it is possible to consider improving the mastitis resistance in goat by selection on SCC. However, efficiency of such a selection raises some concerns, especially because non-infectious factors of variation have a large effect on goat milk SCC. Our study therefore consisted in evaluating the consequences of SCC-based selection on intra-mammary infections. Using progeny-tested AI bucks selected for extreme breeding values for somatic cell scores (SCS = log transformed SCC), two groups of 61 High SCS and 44 Low SCS goats were produced and raised at the INRA experimental facility of Bourges. Milk bacteriological analyses and SCC of half-udders were performed at the kidding date and at 7 monthly points in first lactation. Milk production was similar in the 2 lines. The mean SCC was 1,440,000 cells/mL and 616,000 cells/mL for the High and Low SCS goats, respectively, with a significant ($P \leq 0.05$) difference of 1.2 point in SCS. Regarding milk bacteriology results, 35% of samples were positive. Main bacterial types found were Coagulase Negative Staphylococci (58.4%) and especially *S. xylosus* (19.7%). The mean SCS was significantly higher for the positive than for negative milk samples (4.8 ± 0.2 vs. 3.6 ± 0.1). Additionally, the milk SCS of positive samples was related to the bacterial type: *S.aureus* (5.5 ± 0.5), *S.caprae* (5.2 ± 0.3) vs. *Bacillus* (4.0 ± 0.3). Regarding the effect of the SCS line, frequency of positive samples was significantly higher in the High SCS ($46 \pm 3\%$) than in the Low SCS ($28 \pm 3\%$) goats. Within the High line, the difference between positive and negative samples ($+0.9$ point of SCS) was much higher than in the Low line ($+0.4$ point of SCS). This observation could be explained by a higher quantity of pathogens in the positive samples in the High line when compared to the Low line. In conclusion, results of the experiment gave good evidence that goat milk SCS is related to the infectious status of the udder and that SCS-based selection in goat will decrease the prevalence of intra-mammary infections and the amount of bacteria within infected samples.

BOOK OF ABSTRACTS

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