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Reproductive Performance of Small Ruminants in the Transhumant Grazing Systems of the Chinese - Mongolian Altay Mountains

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Abstract

Situated at the Chinese-Mongolian border, the semi-arid pastures of the Altay Mountains are mainly utilised by transhumant livestock keepers. Their sheep (S) and goats (G) serve the increasing demand for meat (S: particularly in China), and Cashmere wool (G: particularly kept in Mongolia). While these demands generate income opportunities for livestock keepers, large herds potentially threaten the sustainability of the rangeland-based systems in this fragile environment.

To better understand biological and socio-economic determinants of herd expansion, we conducted progeny history interviews on breeding females in Qinghe county of China (120 S, 73 G) and neighbouring Bulgan county of Mongolia (83 S, 173 G), yielding data on reproductive performance, mortality and culling of these animals and their offspring (Qinghe: 280 lambs, 185 kids; Bulgan: 330 lambs, 462 kids).

The results show marked differences between both regions, with animals reaching first parturition age (in months) earlier in Qinghe (S: 20.9, G: 17.8) than in Bulgan (S: 35.7, G: 38.3), while parturition interval deviated by one month only between the two counties. The abortion rate was very low or not recorded in Qinghe but relatively high in Bulgan (S: 6.5 %, G: 6.7 %); in consequence, parturition rate was higher in Qinghe (S: 100 %, G: 109 %) than in Bulgan (S: 85 %, G: 93 %). Overall mortality averaged 1.0 % (S) and 5.4 % (G) in Qinghe, and 4.0 % (S) and 2.6 % (G) in Bulgan. Given the different production objectives for both species in the two counties, culling rates were higher in Qinghe (S: 30.5 %, G: 14.6 %) than in Bulgan (S: 11.1 %, G: 3.3 %). At an average small ruminant herd size of 93.2 animals in Qinghe and 68.8 in Bulgan, and a share of 88 % and 24 % sheep, respectively, this values indicate rapid expansion of small ruminant numbers in Qinghe and a bit slower in Bulgan. Thus, measures to avoid overuse of pastures must (and are) particularly be taken in China, while in Mongolia this threat is less severe. Yet, biomass yield on pastures are higher on the Chinese than on the Mongolian side (see contribution of G. Jordan, this Tropentag) and have also to be taken into account.

Keywords: Cashmere goats, Central Asia, culling, progeny history, sheep, sustainability

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