The Weight Variations of Grazing Goats and Sheep in the Desert Steppe in Winter and Spring

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Key words : desert steppe ,live weight ,goats ,sheep ,daily weight gain

Introduction Grazing ecosystem was the necessary process in which grassland ecosystem converted from primary production to secondary production . Livestock productivity was not only the important items of plant-animal-interface in the grazing ecosystem ,but also one of the important indices of evaluating grazing system and grassland conditions . Livestock weight variations which including live weight and daily weight gain were the direct reactions of grazing movement to livestock-plant-soil system ,influencing directly farmers′ economic returns .

Materials and methods The dynamic variation of live weights of grazing goats and sheep with four different proportional flocks in winter and spring were observed in detail with full-time in the *Stipa breviflora* desert steppe in Inner Mongolia (41°47′ N ,111° 53′ E ,average annual precipitation=280 mm ,elevation=1960～2800 asl ,soil=light chestnut) . The ratios of goats to sheep of the flocks were 1 ∶ 0 (A) ,1 ∶ 1 (B) ,1 ∶ 3 (C) and 0 ∶ 1 (D) respectively . The goats and sheep for trials in the four flocks with healthy ,similar live weights and identical ages were observed from Jan .17 ,2007 in winter to Mar .27 ,2007 in spring . The total experimental period was 70d .

Results For both goats and sheep the live weights in all flocks showed no significant difference in the start of experiment in winter . But the live weights of goats and sheep between different flocks changed significantly in the end of experiment in spring . The live weights of goats in C decreased most dramatically ,A was secondary ,and B was the least ,i .e 6 .0kg ,4 .0kg and 1 .0kg respectively . The weight loss of sheep was D＞C＞B ,decreased by 9 .5kg ,7 .5kg and 4 .5kg respectively . The daily weight gains of goats and sheep in the four flocks were all negative ,in which the goats and sheep in B were the largest ,the values were -14 .3g/goat/d and -64 .3g/sheep/d respectively . The amplitudes were -3 .0% and -9 .1% respectively . The weight loss of sheep in D was the heaviest ,the value was -135 .7g/sheep/d ,the amplitude was -18 .6% .

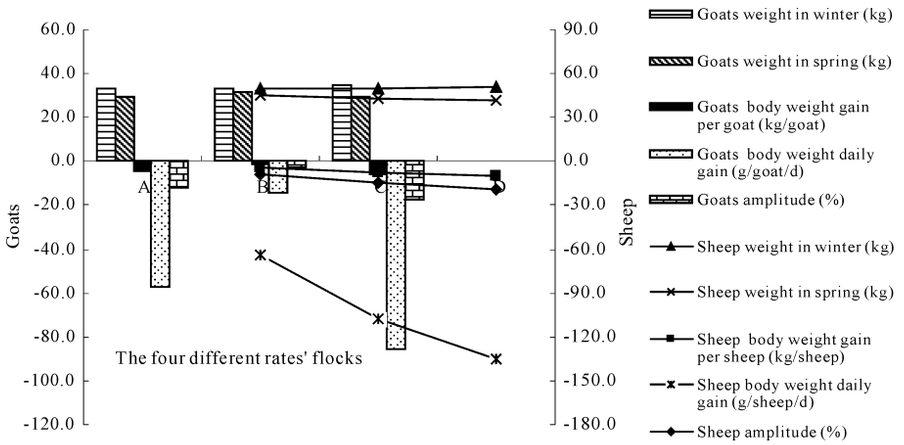

Figure 1 *The live weight variations of grazing goats and sheep in the flocks from winter to spring .*

Conclusions In flock A ,B ,C and D ,the live weights of goats and sheep decreased with different degrees from winter to spring . As far as the live weights of goats and sheep ,under the circumstances of the similar grassland condition and the accordant grazing management ,the structure of A ,C and D had disadvantage effects on live weights of goats and sheep . B was considered reasonable and practicable ,that is the ratio of goat to sheep was 1 ∶ 1 .

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