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Adaptation Strategies to Climate Change for Productive and Reproductive Performance of Desert Sheep in Semi-Arid Zone, Sudan

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Abstract

Climate change has great impact on livestock production systems in semi-arid zones, such as traditional nomadic systems.

Two experimental studies were carried out to decrease the impact of climate change on sheep productivity in north Kordofan state. In the first experiment 340 ewes and 18 rams of desert sheep were selected from the nomadic herds, animals were divided randomly into four groups, group one was as farmer's practice (no supplement) and the other three groups were supplemented. The breeding is controlled by tiding the reproductive organ of the rams, this application is known by nomadic herders as “Kunan” and applied during the breeding season (February to March). The birth of the lambs occurs in the rainy season. The study indicated the importance of the nutritional status of ewes at mating and supplementation improved the productive and reproductive performance. The improved nutritional status of the animals made them better adaptable to environmental changes on rangeland. The study showed that supplementation and application of Kunan are very important strategies to adapt environmental changes in semi-arid zones.

In the second experiment 32 ewes were selected, the ewes were in late pregnancy. The animals were divided into 4 groups, three groups were allocated to supplementation diets and the last group was the control as in farmer practice. Animals were maintained on pasture and supplemented with treatments until day 60 post-partum. Live weight of delivered ewes and lambs were recorded at birth and weekly till weaning weight. The results indicated that supplemented ewes had improved body weight and the birth weight of the lambs were higher.

Keywords: Adaptation strategies, climate change, ewes, lambs, Sudan