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## Effect of Feed Supplementation on the Performance of Nomadic Dairy Cows in Rangeland of Kordofan, Sudan

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### Abstract

Three experiments were carried out with Dar El-Reih cows of northern Kordofan (Sudan). Records were kept for daily milk production and body weight, body condition score and progesterone profile. The cows that recently calved were monitored for the first and sustained progesterone (P4) rise to assess the interval from calving to ovulation and conception.

In the first experiment 36 cows were selected from the nomadic herd and divided into three groups. The trail group (group A) was supplemented with a high energy high protein concentrate mixture (ration A) and second group (group B) received a medium energy medium protein concentrate mixture (ration B), while the third group (group C) received a low energy low proteins concentrate mixture (ration C). The cows were at their early lactation and were fed their respective concentrate mixture for six weeks at the rate 2 kg/cow/day after grazing on the available natural pasture. The results indicated that group A cows had a significantly higher milk yield ( $P < 0.05$ ) than group B or group C cows, and group C cows had lowest milk yield of all the all groups, Group A had also attained the highest body weight and body condition .

In the second experiment, the same groups of animals in the first experiment were used, and they were supplemented with the same rations at the same rate for a period of eight weeks. The experiment was carried out after the rainy season, when the cows were at their mid-lactation. The results obtained indicated significant differences in milk yield among the experimental groups ( $P < 0.05$ ). The highest milk yield was obtained by group A cows followed by group B and group C cows respectively.

In the third experiment, three trials were conducted to study the effect of molasses supplementation on milk yield in comparison with the conventional concentrate feed ingredients used in the region. In each trial 12 cows were selected and were divided into two experimental groups. One group designed as a test group and the other as a control group. In each trial the test ration contained molasses, replacing grain sorghum, or sorghum brewery residue, the results revealed significant differences in milk yield between the test and control groups.

**Keywords:** Feed supplementation, Kordofan, nomadic dairy cows, performance, Sudan