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The Effect of Supplementation Strategies on Productive Performance of Cows Kept under Different Husbandry Systems

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Abstract

The three extensive sedentary, transhumance and migratory cattle husbandry systems were closely monitored during 365 days in the semi-arid rain fed area of Western Sudan.

In the sedentary system seven groups of cattle herders were selected, in the transhumance system three groups and, in the migratory system five groups. Supplementation groups were offered either poultry manure and molasses, or only molasses, and were compared to groups using farmers' own concentrate feed. In each group the recently calved cows were monitored for post-partum ovarian activity using milk progesterone radioimmunoassay. Days to conception were taken as non-return to estrus. Regression analyses were done for fertility parameters against body weight (BW) and body condition score (BCS) at calving, 30, 60, and 90 days after calving, as well as milk yield (MY) at 30, 60, and 90 days after calving.

The results revealed that there was a wide variation in both, days to first ovulation and days to conception in all systems. Cows in the sedentary and migratory system showed gradual increase in BW and MY from calving up to 90 days. BCS was found to decrease from calving to 60 days in all systems. Poultry manure/molasses diet as supplementation showed the best increase in MY in the sedentary system. Diets substituted with molasses alone increased MY in the sedentary and transhumance system.

It was concluded that poor reproductive performance in cows kept under extensive traditional management was due to poor management practices, which ignored high-energy supplementation during late pregnancy and early lactation, especially during the dry season when pastures deteriorate drastically. Controlled mating and suckling together with good feeding strategies may greatly enhance reproductive performance of cows kept under extensive systems of management. Fertility of cows kept under traditional extensive systems was low as indicated by long post-partum anoestrus periods and long days to conception in the majority of cows investigated. The sedentary system showed the shortest days to ovulation and conception as these farms used controlled suckling. The migratory system cows showed better fertility parameters and were in a better nutritional status.

Keywords: Dairy cows, feed supplementation strategies, husbandry systems