

Milk yield and quality in Guernsey cows fed cottonseed cake-based diets partially substituted with baobab (*Adansonia digitata* L.) seed cake

Abstract

The objective of this study was to determine the effects of partially substituting cottonseed cake with graded levels of baobab (*Adansonia digitata* L.) seed cake (BSC) on milk yield and quality in Guernsey cows. Sixteen cows in mid-lactation and in their third parity were allocated to diets containing 0% (control), 5%, 10%, and 15% BSC in a completely randomized design. Each cow was given a daily feed ration of 6 kg and a basal diet of soya bean stover ad libitum. There were no differences in daily feed intake ($P > 0.05$), but basal intake differed among all treatment groups with cows on the control diet having the highest intake (30 ± 0.34 kg/day). Mean daily milk yield differed ($P < 0.05$) among all treatment groups. However, the control had higher milk yield of 12.1 ± 0.73 kg/day, and the 15% BSC had the least yield of 7.46 ± 0.73 kg/day. Cows on the control diet had higher milk butterfat content (6.12%; $P < 0.05$) than those on the BSC-based diets. Protein content differed ($P < 0.05$) across all treatment groups with cows on 15% BSC producing the highest protein content (3.43%) while the control had the least (2.6%). The concentration of milk total solids for cows fed on 15% BSC was higher ($P < 0.05$) than that from cows on other diets. Lactose content was not affected by the diets ($P > 0.05$). These results indicate that BSC can substitute soya bean cake in dairy diets, but milk production and butterfat content are compromised.