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Study the effect of different levels of sorghum silage in the diet on the performance of lactating cows

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Abstract

Corn silage is becoming one of the main popular feeds for dairy farms. However, because of high water demand for corn cultivation, sustainability of corn silage production is coming to be constraint. Therefore, in recent years, sorghum crop has been considered as an alternative silage crop with considerable forage performance and lower water requirement. Hence dairy farmers have not been considering the use of sorghum for ensiling therefore, the ensiling and utilization of this fodder in the diets of dairy cows should be introduced. This trial was conducted to optimize sorghum silage in the diets of milking cows.Sorghum (*Speed feed Var*.) and corn were planted (two hectares for each) then harvested and ensiled seperatley. Four experimental diets were formulated in which corn silage was replaced with 0.00, 33, 66 and 100% with sorghum silage. Each dietwas allocated to 8 lactating cows where performance of the cows were determined. The fresh milk and 3.5FCM yield did not affected by the substitution of different levels of sorghum silage in the diets. Milk composition including fat (3.47-3.62%), protein (2.75-2.86%) lactose (4.47-4.66%) total solid (11.68-11.85%), solid non fat, and fat/protein ratio were not statistically difeerent between the treatments, but total saturated fatty acids were decreased ($P<0.05$) when sorghum silage included in the diets. Mik urea nitrogen ranged 12.76 to 14.32 mg/100g which was not significantly different between the treatments. The DM, OM and NDF digestibility did not affected by the corn or sorghum silage in the ditets. No differences were found for feed intake and rumination times between the treatments. Body wieght changes and body condition score did not affected by the treatments but, fecal score was higher ($P<0.05$) when sorghum silage was increased in the diets. Reproduction traits were not affected by the replacing of corn silage with sorghum silage in the diets. In general, corn silage could be replaced by sorghum silage (*speed feed var*.) in the diets of lactating cows (with daily milk yield about 30kg) but, the diets should be supplemented with starch sources to compensate the energy balance.

Keywords: lactating cow, performance, sorghum silage