

A study was made of several forage and concentrate systems in the areas in Kenya where cattle with high genetic potential are kept, to ascertain the type and quality of feed given to lactating cows by small-scale dairy farmers. Under zero-grazing only, one fodder, napier grass (*Pennisetum purpureum*) was given to cattle, whereas under semi zero-grazing, several fodders (cabbage, maize forage, weeds, potato tops and kale) varying in degradability and nutrient composition were available. Pastures of all the farms were similar (*Pennisetum clandestinum* and *Chloris gayana*); concentrate varied between farms in the contents of crude fibre and minerals. Grazing cows ingested the least amount of DM, 12.2 kg daily, and produced the least quantity of milk, 10.1 kg daily. Diets based on concentrates and forage were deficient in crude protein, calcium and phosphorus, marginal in sodium and excessive in magnesium. Feeding on napier grass had no advantage over grazing and use of feed supplements. It was recommended that tree legumes, such as *Leucaena* and *Sesbania* and a well-compounded mineral supplement be used to meet requirements for the deficient nutrients.