

Abstract

Dairy farmers in Kenya grow maize for forage and food. They use maize planting density, weeding regimes and thinning to regulate the quantity of forage from both maize and weeds. The objective of this work was to evaluate the effects of weeding and planting density on maize forage and grain yield and quality of forage. Field experiments were conducted at the Kenya Agricultural Research Institute, Muguga for two seasons (October 2001 to August 2002). Weeding regimes included: maintaining the plots weed free by hand weeding throughout the growth period (W1), not weeded (W2), herbicide (W3) and hand weeding twice (W4). The maize planting densities were 9 plants m⁻² (D1) and 18 plants m⁻² (D2). The experimental design was randomized complete block design replicated four times. Maize in both D1 and D2 was thinned to 4 plants m⁻² at tasseling stage and the thinnings were assessed as forage. Stover and weeds with forage value and maize yield were assessed at harvest. Thinnings biomass was higher where weeds were controlled (W1, W3, W4) and D2 than D1. Maize grain yield was higher in D1 than D2. Maize thinnings had higher digestibility and crude protein than stover. Herbicide was more effective in controlling weeds than hand weeding twice. Although not weeding reduced forage and grain yield, at least 55 % of the weeds were edible and of high quality and could be used as forage and vegetable, but the weed biomass was much lower than of maize. In conclusion, dairy farmers could practice plant maize at 18 plants m⁻² and hand weed twice to increase forage quantity and quality while ensuring moderate maize grain production.