

Abstract

A survey of maize-dairy farmers in the Central Kenyan Highlands showed that thinnings, green stover, dry stover and weeds from the maize crop respectively comprised 6%, 10%, 8% and 5% of the total forage. Nevertheless, most weed research of maize completely ignores the use of maize crop residues as forage. The value of weeds from the maize crop is similarly ignored in assessing the costs and benefits of weed control. The effects of maize weeding regimes on maize forage and grain yields were therefore evaluated over three growing seasons in a bimodal rainfall area (Kiambu). Weeding regimes were weed free (W1), weedy (W2), pre-emergence herbicide (W3) and hand weeding twice (W4). Edible weeds had a dry matter digestibility of 65% and 20% crude protein (CP) – higher than in the maize stover (62 and 4%, respectively). The weedy regime (W2) reduced maize forage quality: the CP was lower in maize stover and thinnings. Although weeds provided a measurable source of forage for resource poor farmers, they directly reduced grain yields and the quality and quantity of maize forage. Long-term costs and benefits were also evaluated. During the third season (short rains 2002/3), effects of applying the weeding regimes for the two previous seasons were quantified by weed emergence and hand weeding times. The weedy regime (W2) needed 81 man-days ha⁻¹ for weeding, significantly more than W1, W3 and W4 (67, 63 and 63 man-days ha⁻¹, respectively). Failure to control weeds thus meant that more labour was needed to hand-weed subsequent crops.