

Abstract

Many small-scale farmers in Central Kenya stall-feed cattle and a rapid rural appraisal (RRA) in the Kiambu district showed that 25% of the forage comes from the maize crop. Crop protection advice to farmers generally focuses on maize for grain and ignores the importance of the dairy animal in the livelihoods of these resource-poor livestock keepers. The RRA showed that the three principal biotic constraints on the maize crop were maize streak virus disease (MSVD), maize stalk borer and weeds. Experiments showed that early MSVD infections reduced forage off take from the maize but had little effect on crop quality for livestock production. Tolerant cultivars such as Muguga-1 alleviate yield losses and the taste and cooking quality of this cultivar was acceptable to the farmers. Weeds likewise seriously reduced forage production. However, for small scale farmers in Kenya, weeds infesting maize crops provide a measurable source of animal forage, weed digestibility being 65% and crude protein 19.9%. Nevertheless, weeds greatly and directly reduced maize forage digestible dry matter and total crude protein. The studies also showed that the management of the maize crop is modified by high density planting followed by thinning and delayed second weeding to allow greater forage production from the growing crop. Maize forage digestibility was highest in the thinnings while the stover was lower. Digestibility of stover was similar to the weeds. The impacts of these practices on weeds and MSVD has been studied showing that while high density planting suppresses weeds, a delayed second weeding may allow some shedding of weed seeds. Integrated pest management options designed to address all three biotic constraints using non-chemical socio-economically appropriate methods will be discussed.