Effect of land preparation and weeding on maize (*Zea mays*) grain yields in the coastal region of Kenya

*(Keywords: Hand weeding, herbicides, land preparation, pendimethalin, atrazine, metolachlor, Kenya)*

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Abstract. A field study was conducted at the Regional Research Centre, Mtwapa and at the Msabaha subcentre in Kilifi District of Coast Province, Kenya between 1986 and 1989. The objective of this study was to investigate the effects of four land preparation methods and different weeding regimes on maize (*Zea mays*) grain yield. Land preparation methods were slashing, hand hoeing, tractor ploughing, and herbicide (paraguat) application. Weeding treatment were: no weeding, hand weeding at 4th leaf, 10th leaf, 16th leaf, 4th and 10th leaf, 4th and 16th leaf, 10th and 16th leaf stages, and weed control using a pre-emergence herbicide (pendimethalin and atrazine-metolachlor mixture). Use of pre-emergence herbicide had the same effect on grain yield as two weedicings (at 4th and 10th leaf stages). The yields obtained with chemical weeding were significantly higher than those obtained with one early weeding (at 4th leaf stage). Land preparation methods did not differ significantly in their effect on maize grain yield. Weeding more than once generally gave a yield advantage of about 60-135% over one weeding. There was no significant interaction between land preparation methods and weeding treatments. The possible implications of these findings on maize grain yields in this region are discussed.