EFFECTS OF WEED CONTROL METHOD ON WEED INFESTATION,  
SOIL TEMPERATURE AND MAIZE YIELD IN SWAZILAND

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ABSTRACT

Weed problems in farms and gardens take up much time, money and energy of farmers wherever farming is practiced. Unattended to, weeds have the ability to reduce crop yields significantly. To control weeds in their farms, peasant farmers adopt a number of methods. It would be beneficial to farmers to know which weed control method is likely to give them the best benefits. The objectives of this investigation were to determine how weed control methods affect the density of weeds, soil temperature and maize yield in Swaziland. Five weed control methods, including two types of organic mulch and a herbicide (Bladex-plus) were evaluated. Weed infestation soil temperature, maize yield and yield components were assessed in each method. Results showed a significantly higher (P<0.001) weed density in manual control than when herbicide or mulch was used. There was a negative but non-significant correlation (r = 0.20) between weed density and maize yield. A larger diversity of weed species was associated with manual weed control but the lowest number of weed species was observed in the pre-emergence herbicide application. Soil temperature showed an unclear correlation with crop yield. Positive correlation coefficients were observed between maize yield and cob length (r=0.44), cob diameter (r=0.67), and 100-grain mass (r=0.45). Grain yield varied from a low of 4005 kg/ha (manual control) to a high of 5073 kg/ha (preemergence Bladex-plus), but the differences were not significant. It is recommended that if a farmer can afford Bladex-plus, it should be applied a pre-emergence herbicide to reduce the level of weed infestation, but if the herbicide is not affordable, mulching with non-glossy newspapers would provide a better weed control than hoeing.

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