Lupane State University

Building Communities through Knowledge

Faculty of Agricultural Sciences

Department of Crop and Soil Science

COMPARISON OF CONSERVATION AND CONVENTIONAL TILLAGE 011 GROWTH OF DROUGHT TOLERANT MAIZE

BY MUSONZA GODFREY D

L007033C

SUPERVISOR: MRS S. SIBANDA.

THIS DISSERTATION IS SUBMITTED IN PARTIAL FULFILLMENT OF THE BACHELOR OF AGRICULTURAL SCIENCES SPECIAL HONOURS IN CROP SCIENCE DEGREE AT LUPANE STATE UNIVERSITY.

JUNE 2013

ABSTRACT

In the drier areas of Southern Africa, farmers experience drought once every two to three years. Relief agencies have traditionally responded to the ensuing famines by providing farmers with enough seed and fertilizer to enable them to re-establish their cropping enterprises. However, because of the lack of appropriate land and crop management interventions, vulnerable farmers are not necessarily able to translate the relief into sustained gains in productivity and incomes. To improve crop production in the marginal rainfall regions, farmers have to adopt cultural practices that conserve fragile soils and extend the period of water availability to the crop, be it grain or forage. The study aimed at coming up 1 with the best tillage system for proper recommendations for farmers to improve organic matter and soil moisture in maize cropping systems. In this study, the effects of tillage on plant characteristics were investigated. The experiment was conducted on a sandy loamy soil at Ekusileni'mission in Filabusi. The tillage systems evaluated were conventional tillage (flat planting) and conservational tillage with the use of basins. Percentage of emerged maize seedlings, plant height and stem thickness were measured to assess the effects of tillage systems on these parameters. Maize emergence percentage was higher in conservational tillage system than the conventional tillage system. Plant height and stem thickness showed no significant differences under conservation and conventional tillage. It can be concluded that farmers can adopt the use of conservational tillage as it showed high percentage on seedling emergence and a good crop establishment compared to conventional tillage.