

Effect of Tillage Practices and Planting Patterns on Growth and Yield of Maize (Zee Maize)

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Abstract : Maize (*Zea mays*) is mostly grown and consumed by Nigeria farmers using different tillage practices which have a great effect on its growth and yield. In order to maximize output, there is need to recommend a suitable tillage practice for crop production which will increase the growth and yield of maize. This study investigated the effect of tillage practices and planting pattern on the growth and yield of maize. The experiment was arranged in a 4x3x3 Randomized Complete Block Design (RCBD) layout, with four tillage practices consisting of no-tillage (NT), disc ploughing only (Ponly), disc ploughing followed by harrowing (PH), and disc ploughing, harrowing then ridging (PHR). Three planting patterns which include; 65 x 75, 75 x 75 and 85 x 75 cm spacing within and between the rows respectively, were randomly applied on the plots. All treatments were replicated three times. Data which consist of plant height, stem girth, leaf area and weight of maize per plots were taken and recorded. Data gathered were analyzed using Analysis of Variance (ANOVA) in the Minitab Software Package. The result shows that PHR under the third planting pattern has the highest growth rate (216.50 cm) while NT under the first planting pattern has the lowest mean value of growth rate (115.60 cm). Also, Ponly under the first planting pattern gives a better maize yield (19.45 kg) when compared with other tillage practices while NT under first planting pattern recorded the least yield of maize (9.40 kg). In conclusion, considering soil and weather conditions of the research area, plough only under the first planting pattern (65 x 75 cm) is the best alternative for the production of the Swan maize variety.

Keywords : tillage practice, planting pattern, disc ploughing, harrowing, ridging

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