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Determination of Critical Potassium Concentration of Corn (*Zea Maize L.*) at Early Stage of Growth Using Flood and Drain Technique

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Abstract

Critical nutrient concentration is defined as the level that results in 90% of maximum yield or growth which can also be used as a basis in formulating recommendations. An experiment using hydroponically grown corn to determine the critical potassium concentration at its early stage of growth and to assess the suitability of the flood and drain technique. Five (5) treatments used in the experiment which consist of different levels of potassium using KCl arranged in a Completely Randomized Design. There was no significant difference observed in biomass and potassium content of the plant tissue. On the other hand, critical potassium concentration was observed in 2.1% which correlates to the plant biomass and has an r-value of 0.99. This finding suggests that the flood and drain technique is suitable in determining the critical potassium concentration of corn and also this could be useful to an experiment that also involves CNC determination.

Keywords: Critical K concentration, corn, flood and drain technique/ ebb and flow system

Research article

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INTRODUCTION

Corn (*Zea maize L.*) locally known "mais" is next to rice as the staple food for the most Filipinos, which is also considered as an important source of energy. About 20.8 % of the total population in the country eat corn, especially in the Visayas region (Boda, 1965). According to Successful Farming (1996), corn is the most highly valued of all cereal grains for its multifarious uses of human food, as an important raw material and a vital ingredient for a variety of industries such as paper, beverages, corn starch, corn oil, plastics, high valued feeds, industrial chemicals, medical products, pharmaceuticals, ethanol and many more. Approximately 26% of the country's area are devoted to corn production or approximately 3,432,700 hectares of agricultural land (PCARR, 1975). However, it is important to increase food production to be able to meet the food demand of the continuing population of the country.