



EARLY VEGETATIVE GROWTH RESPONSES OF *Vigna radiata* L. (MUNGBEAN) cv NSIC Mg 17 TO BORON TOXICITY

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ABSTRACT – After the Philippines experienced a severe El Niño last 2015 to 2016, there is likelihood that this will recur given the continuous threat posed by climate change. This natural phenomenon could lead to extreme drought causing a dependence on groundwater as an alternative source of irrigation which is a contributory factor to boron toxicity in plants. With the likelihood that this could adversely affect the growth and yield of a local agricultural crop, this study was conducted. This aimed to investigate the vegetative growth responses to boron toxicity of *Vigna radiata* L. cv NSIC Mg 17, an economically important Philippine legume. Hydroponics culture method using Simple Nutrient Addition Program (SNAP) solution with increasing boron concentrations was utilized in the experiment. Results showed that concentrations as high as 25 mg L⁻¹ significantly influenced plant survival percentage, root length and number of chlorotic and necrotic leaves. These findings indicated that an increase in boron concentration in the environment could adversely affect the vegetative growth of mungbean. Similar investigations on the effects of boron toxicity using other local crops are needed for additional information and as basis in making policies concerning the use of groundwater as irrigation water for crops.

Keywords: boron toxicity, growth response, hydroponics, Vigna radiata



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