

ABSTRACT

Sweet corn (*Zea mays saccharata* Sturt.) is a horticultural commodity that is widely cultivated and consumed as a fresh vegetable due to its high demand. This study aimed to determine the effects of ameliorants and moringa leaf liquid organic fertilizer on the growth of sweet corn and the chemical properties of Inceptisol soil. The study was conducted at the research field and laboratory of the Agroecotechnology Study Program, Faculty of Agriculture, Malikussaleh University, from January to July 2026. The experiment was arranged in a Randomized Block Design (RBD) with two factors and three replications. The first factor was moringa leaf liquid organic fertilizer, consisting of P0 (0 ml/L), P1 (200 ml/L), and P2 (400 ml/L), while the second factor was ameliorants, consisting of A0 (without ameliorant), A1 (cow manure at 7.5 kg/plot), and A2 (rice husk biochar at 2.5 kg/plot). The observed variables included plant height, number of leaves, stem diameter, chlorophyll content, leaf area, stomatal length and width, and soil chemical properties. The results showed that ameliorant treatments affected plant height, number of leaves, stem diameter, chlorophyll content, and leaf area, with cow manure (A1) showing the best response. Moringa leaf liquid organic fertilizer affected plant height at 36 days after planting (DAP), chlorophyll content, and leaf area. An interaction between ameliorant and moringa leaf liquid organic fertilizer treatments was observed in plant height, stem diameter, chlorophyll content, and leaf area. The application of ameliorants and moringa leaf liquid organic fertilizer also affected the chemical properties of Inceptisol soil, particularly soil pH, organic C, and available P, but did not affect total N.

Keywords: Nutrient availability, plant nutrition, soil fertility, vegetative