

ABSTRACT

Tomato (*Solanum lycopersicum* Mill.) is a seasonal horticultural crop classified as a fruit vegetable and belonging to the Solanaceae family. This study aimed to evaluate the effects of KCl fertilizer, worm castings fertilizer, and their interaction on the growth and yield of tomato plants servo F1 variety. The experiment was conducted using a polybag system at the designated field site with a factorial treatment design consisting of three KCl application rates (0, 4, and 8 g polybag) and three worm castings application rates (0, 400, and 800 g polybag). The results showed that KCl fertilizer significantly influenced flowering time, leaf chlorophyll content, fruit weight per plant, fruit size, and yield per hectare. Worm castings fertilizer significantly improved plant height, stem diameter, chlorophyll content, number of fruits, and overall yield components. The interaction between KCl and worm castings significantly enhanced chlorophyll content, fruit length, and fruit weight per plot, with the best treatment combination observed at 4 g KCl and 800 g worm castings per polybag. It can be concluded that the integrated application of KCl and worm castings fertilizer effectively enhances tomato growth and yield potential.

Keywords: Concentration, KCl Fertilizer, Worm Casting Fertilizer, Servo F1