APPLICCATION OF AMINO ACID, ROOT BACTERIA, SUGAR SUGAR EXPLORATION BACTERIA ON THE PRODUCTION OF SUGAR CANE *(Saccarum officinarum* L.*)*

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ABSTRACT

Sugar cane (Saccharum officinarum L.) is one of the plantation crops cultivated as raw material for sugar. Efforts to increase sugar cane production, namely sugar cane cultivation techniques, need to be considered, especially fertilization to maintain soil fertility. The aim of this research was to determine the effect of the application of amino acids, root bacteria, sugarcane land exploration bacteria on the productivity of sugarcane plants (Saccharum officinarum L.) in the Gapoktan Jaya Makmur Tegal Besar Jember experimental garden. The method used in this research is the T test which consists of three treatments, namely treatment P1 (100% inorganic fertilizer: ZA 37.96 kg, NPK 18.98 kg), treatment P2 (50% inorganic fertilizer: ZA 18.98 kg, NPK 9.49 kg, Amino acids 5.7 liters, BC bacteria 22.78 liters), and P3 treatment (inorganic fertilizer 25%: ZA 9.49 kg, NPK 4.74 kg, Amino acids 8.54 liters, BC bacteria 28.48 liters). The results of this research can be concluded that the P1 treatment produced the highest Brix values at observations of 7 BST, 8 BST, 9 BST, and 10 BST compared to P2 and P3. There was no consistently significant effect on the Brix value from the addition of ammonia and bacteria (p2 and p3) compared to P1. Treatment P1 had the highest sugarcane production, followed by treatment P2, and treatment P3 had the lowest sugarcane production. Influencing factors such as root volume, soil organic carbon, and soil bacteria play a role in determining sugarcane production.

Keywords: *Sugarcane, Amino Acids, Root Bacteria and Sugarcane Land Exploration*