Effect of Shallot Extract on Sugarcane Seedling Growth (*Saccharum officinarum* L.) Bululawang Variety

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ABSTRACT

Sugarcane (Saccharum officinarum L.) is the main source of indispensable sugar, and its demand continues to increase along with population growth. However, domestic sugar production has not been able to meet the existing sugar consumption. The suboptimal quality of sugarcane can be improved by using superior seedlings obtained through bud chip technique, i.e. with one bud eye. To accelerate the budding phase and root growth in sugarcane plants, the use of growth regulators (ZPT) can be one of the solutions. Shallot is a natural ZPT that contains auxins and gibberellins that are useful for helping plant growth and development. This study was conducted with the aim of knowing the effect of shallot extract on the growth of sugarcane seedlings and what dose is most effective on the growth of sugarcane seedlings. The research was conducted in January 2024 - March 2024 at the Jember State Polytechnic Field Lab. This research was processed using a Non-Factorial Randomized Group Design consisting of 1 factor, namely the provision of shallot extract with levels: P0 (Control), P1 (shallot extract 250 gr/plant), P2 (shallot extract 300 gr/plant), P3 (shallot extract 350 gr/plant), P4 (shallot extract 400 gr/plant), P5 (shallot extract 450 gr/plant). The results showed that shallot extract had no significant effect at all plant ages on the parameters of plant length, stem diameter, and number of leaves. Shallot extract had a very significant effect on the parameter of the number of shoots at the age of 75 HST and 90 HST and had no significant effect at the age of 15 HST, 30 HST, 45 HST, and 60 HST. The dose of shallot extract that is effective on the growth of sugarcane seedlings is P4 with a dose of 400 gr/plant which shows the best results in the parameter of the number of shoots with an average of 3.15 shoots and the number of leaves with an average of 12.48 strands. In addition, the P5 treatment with a dose of 450 gr/plant showed the best results in the stem diameter parameter with an average of 1 mm and the P3 treatment with a dose of 350 gr/plant showed the best results in the plant length parameter with an average of 68.23 cm.

Keywords: Sugarcane, Shallot Extract, Bud Chip