

ABSTRACT

Shallots (*Allium cepa* L.) are a vegetable commodity in high demand among the public. They possess significant economic value and high nutritional content. Furthermore, shallots are a staple consumed regularly, resulting in substantial consumer demand. Liquid organic fertilizer made from banana stems is produced through fermentation under anaerobic conditions. Utilizing banana stem waste can support plant nutrient growth, as the material contains high levels of cellulose, water, and fiber. This study aimed to determine the effect of Sonic Bloom application timing and liquid organic fertilizer (LOF) banana stem concentration on the growth and yield of shallot. This study used a Split-Plot Design within a two-factor Randomized Block Design (RDB). The main plot factor was the timing of Sonic Bloom application, consisted of W0 (no Sonic Bloom), W1 (07:00–08:00 WIB), W2 (12:00–13:00 WIB), and W3 (16:00–17:00 WIB). The subplot factor was the concentration of banana stem LOF, consisted of P0 (0%), P1 (25%), P2 (35%), and P3 (45%). The results showed that the timing of Sonic Bloom application had a significant to highly significant effect on plant height, number of leaves, number of tillers, stomatal length and width, number of stomata on the upper leaf surface, fresh bulb weight, dry bulb weight and number of bulbs. The liquid organic fertilizer (POC) of banana stem affected at plant height, stomatal length on the upper and lower leaf surfaces and root length. There was an interaction between the Sonic Bloom application time and the banana stem POC concentration at plant height, stomatal length on the upper and lower leaf surfaces. The interaction of W0P2 (no sonic bloom with 35% banana stem (POC)) was the best treatment combination for plant height and W1P3 (07:00–08:00 WIB with 45% banana stem POC) the best stomatal opening was achieved with the combination.

Keywords: Frequency, Production, Organic Fertilizer Nutrienst, Stomatal, Tuber