ABSTRACT

Grapevine (*Vitis vinifera* L.) is a member of the Vitaceae family with three main varieties cultivated in Indonesia: *Vitis vinifera*, *V. labrusca*, and *V. rotundifolia*. High demand for imported grapes in Indonesia has prompted the government to reduce import dependency through the Import Substitution Grape Cultivation policy using adaptive varieties like Ninel, Jupiter, and Everest. Grapevine propagation is typically done through effective stem cuttings, and productivity can be enhanced with growth regulators. Besides synthetic growth regulators, natural ingredients like coconut water, onion extract, and cow urine have been proven to accelerate root, shoot, and leaf growth. This research aimed to study the vegetative growth response of grape cuttings to natural active ingredients and their interaction. The study used a factorial Randomized Block Design (RBD) with 3 replicates, conducted at the Experimental Garden of the Faculty of Agriculture, Malikussaleh University, from October to December 2024. The factors included grape varieties (V): V1 (Everest), V2 (Jupiter), V3 (Ninel), and natural bioactive substances (B): B0 (control), B1 (old coconut water), B2 (onion), B3 (cow urine). The application of natural active ingredients affects the vegetative growth of grape cuttings in terms of the number of leaves, with the highest value observed in the treatment without natural active ingredients (control). There was an interaction between the two treatment factors grape variety and natural active ingredients on the vegetative growth of grape cuttings in terms of the number of shoots, shoot length, and number of leaves.

Keywords: grape, natural bioactive substances, propagation