Germination of dormant onion bulbs in different growing media

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Abstract. The aim of the study was to examine the planting media as a stimulant for onion germination. This study used onion bulbs of the Batu ijo variety with one week after harvest sizes ranging from 20 to 25 g/tuber, bulbs lengths were from 4 cm to 5 cm. The research used a completely randomized design with three factors that repeated 10 replications. Onion bulbs were planted in pots with a volume of 2 L which were only filled with 80% of the pot volume. In each pot was planted one onion bulb that had been cut off the top 1/3 with a planting depth. The number of sample plant pots for each media were 15 pots so that the total were 45 pots. Watering was done as much as 1 L/pot/day so that the growing media was always wet. Every two days They were observed for variables number of sprouts, shoots, roots, and leaves. All variables were analysed by analysis of variance. The results showed that the onion bulbs sown for one month in growing media have not been able to stimulate germination, and cocopeat media produced 20% germination compared with more sawdust and husk media. On cocopeat media, dormant onion bulbs germinated in 14 days after planting (DAP), followed by sawdust and husk media in 16 DAP. Roots of dormant onion bulbs appeared between 7 to 14 DAP, and then shoots appeared in 14 to 16 DAP.

1. Introduction

The length of dormancy of onion (*Allium cepa* L.) bulbs in Indonesia was between 2 to 4 months after harvest [1]. To speed up the replanting of onion in the production centers to suit the season, various methods were needed so that dormant onion bulbs can be shortened. Freshly harvested onion bulbs have 3 stages, namely rest, dormancy, and sprout. According [2], during these stages there will be and increase respiration, organic substrates, gibrellin activity, auxin, and cytokinin, carbohydrate remobilization, and inhibition by abscisic acid and an increase in ethylene concentration. The length of bulbs dormancy and germination that will occur was strongly influenced by weather conditions during the previous vegetative phase [3]. During dormancy, onion bulbs would change in water content, organic acids, carbohydrate content, phenolic compounds, and several compounds associated with endogenous growth of bulbs [4];[5]. Naturally breaking the dormancy of onion bulbs become sprouting was highly dependent on the variety, the nutrients present in the bulbs, and environmental factors. After a period of dormancy, the sucrose synthase activity and respiratory activity in the centre of the bulb increased, concomitant with initial sprout growth [6]. During the germination process of onion bulbs, physiological

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