



Research Paper

Germination of True Shallot Seed (TSS) of onion cultivarson mixing of soil and organic matter as planting media

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Abstract

In Indonesia, onion cultivation uses bulbs, which disrupts stocks of consumption and trade quite significantly. One way to reduce the need for bulbs from onions is to use True Shallot Seed (TSS). Onion of TSS can reduce production costs, and is practical in shipping compared to bulbs. One of the activities in the cultivation of TSS is the preparation of strong, uniform and healthy of seedling. This study aims to examine the appropriate composition of organic matter as a planting media to accelerate the germination time of various cultivars of TSS. The planting media tested was a mixture of soil, rice husk, cocopeat and sawdust. This study used a complete randomized block design which was arranged in factorials. The first factor was the varieties and the second factor was mixing of organic matter. Mixing organic matter with the soil from no tidal swamp before planting onion seeds increase in soil pH from 0.77 to 1.51. Mixing soil with organic matter increased the pH of the media, CEC, WHC, and decreases the bulb density. After germination, the husk and cocopeat mixture showed a pH (5.9), CEC (1.62 mS.cm⁻¹), bulb density (0.3 g/cm³) and WHC (162%). The combination of rice husk and cocopeat as the planting media (4,9 days) exhibited the fastest germination. Planting directly from onion seeds in soil of no tidal swamp resulted in many seeds dying. Germination of cultivar Sanren (78%) was better than Lokananta (65%), Trisula (60%) and Bima brebes (64%) on a mixture of husk and cocopeat.

Keywords

Germination, Onion, Planting media, True shallow seed

1. INTRODUCTION

Increasing production and productivity is key to meeting field requirements through intensification and extensification activities (Bancin et al., 2016). However, increased production faces constraints related to the planting area. To expand the planting area, not only land is required, but also large quantities of seedling. Although substantial income can be earned from onion farming, its significance diminishes if the expenses incurred are also high. Future expectations for onion cultivation include achieving a substantial ratio between income and expenses to effectively finance inputs in onion farming. The greater the obtained ratio, the more precise our selection becomes in determining inputs to provide and in quantities (Rahmadona et al., 2015). Seedling are a costly production factor in onion farming, with a requirement of approximately from 0,8 until 1,2 tons per hectare. Despite the high demand for onion seedling, both in the form of commercial seedling and source seedling, seedling production has not kept pace. Onion production in Indonesia experiences annual fluctua-

tions, resulting in frequent price fluctuations due to uneven distribution in onion production areas.

Onion cultivation in South Sumatra province is still primarily relies on bulbs as planting material and is typically carried out in both dry land and paddy fields during the dry season. Onion production achieved through bulbs cultivation in this province can range from 5 tons per ha to 10 tons per hectare (BPS, 2021). The production of onion bulbs can be accomplished using either vegetative methods, such as bulbs, or generative methods, such as seeds. While using bulbs as planting material is easier to implement, it has several drawbacks, including the requirement for a large quantity of seedling, relatively high costs, difficulties in arranging planting schedules, and competition with consumption onion (Fairuzia et al., 2022). Another approach adopted by various countries such as India, Bangladesh, China, and Egypt is to utilize seeds as planting material.

Some farmers in Indonesia had also begun using seeds as planting material, but the results had been unsatisfactory (Adam et al., 2021). One of the obstacles in utilizing



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Kepada: "M. Umar Harun" <mumarharun@unsri.ac.id>

Dear Dr. Umar Harun,

Thank for your email concerning revision. Please your revise version should be sent by system don't submit by email. We can not track your paper if you sent the revision by manual.. Looking forward to hearing from you soon

Your sincerely

Dedik Budianta
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