

## **ABSTRACT**

Salinity is one of the main problems in rice cultivation. Several attempts have been made to overcome the salinity problem, including improvements to agricultural cultivation from germination to reproduction phase. This study was aimed to determine the effect of saline and non-saline in wet and dry nursery conditions on the growth and yield of rice under saline conditions. The study was conducted in a greenhouse at the Faculty of Agriculture, Universitas Gadjah Mada from November 2017 to September 2018 with a split plot in a randomized complete block design with three replications. The treatments used in this study were nursery conditions (saline and non-saline) and nursery irrigation conditions (wet and dry nurseries). The results showed that wet saline nursery significantly increased relative water content, photosynthesis rate, nitrate reductase activity, proline content, total dry weight, and the number of filled grain. Chlorophyll a, chlorophyll b, and total chlorophyll significantly decreased in the treatment of saline dry nursery, but were not significantly different from the treatment of wet saline, wet non-saline, and dry non-saline nursery. Rice that come from saline nurseries provided better growth and yield compared to plants that come from non-saline nurseries. Although it did not provide good performance during the nursery phase, wet-saline seedlings provided better growth and crop yield compared to those from the treatment of dry-saline, non-saline wet and non-saline when grown in saline media.

**Keywords:** wet-bed, dry-bed, nursery, salinity, rice

## **INTISARI**

Salinitas merupakan salah satu permasalahan utama dalam budidaya tanaman padi. Beberapa usaha telah dilakukan untuk dapat mengatasi permasalahan salinitas, termasuk perbaikan teknik budidaya dari fase perkecambahan hingga reproduksi. Penelitian ini bertujuan untuk menentukan efek persemaian basah dan kering kondisi salin dan nonsalin pada pertumbuhan dan hasil padi dalam kondisi salin. Penelitian dilaksanakan di dalam rumah kaca di Fakultas Pertanian, Universitas Gadjah Mada pada November 2017 hingga September 2018 dengan rancangan penelitian petak terbelah-rancangan acak blok lengkap dengan tiga kali ulangan. Perlakuan yang digunakan dalam penelitian ini adalah kondisi salinitas persemaian (salin dan nonsalin) dan kondisi irigasi persemaian (persemaian basah dan persemaian kering). Hasil penelitian menunjukkan bahwa persemaian basah salin secara signifikan meningkatkan kadar air nisbi, laju fotosintesis, aktivitas nitrat reduktase, kandungan prolin, bobot kering total, dan jumlah gabah isi. Klorofil a, klorofil b, dan klorofil total secara signifikan menurun pada perlakuan persemaian kering salin, namun tidak berbeda nyata signifikan pada perlakuan persemaian basah salin, basah nonsalin, dan kering nonsalin. Tanaman yang berasal dari persemaian salin memberikan pertumbuhan dan hasil yang lebih baik dibandingkan dengan tanaman yang berasal dari persemaian nonsalin. Meskipun tidak memberikan performa yang baik saat fase persemaian, persemaian basah-salin memberikan pertumbuhan dan hasil tanaman yang lebih baik dibandingkan dengan perlakuan kering-salin, basah non-salin dan kering-nonsalin saat ditumbuhkan di media salin.

Kata kunci: persemaian basah, persemaian kering, salinitas, padi, persemaian