Article: Adaptability of white jabon (Anthocephalus cadamba miq.) seedlings from 12 populations to drought and waterlogging

Abstract

The study was carried out for investigation of the adaptability of white jabon seedlings from 12 populations to drought and waterlogging stresses in a controlled greenhouse. The results showed that the adaptive responses of white jabon seedling to drought and waterlogging stress were affected by genotype (population). The drought and waterlogging stresses significantly inhibited plant growth, biomass accumulation and allocation, leaf area, also decreased chlorophyll content, increased carotenoids contents and accumulated free proline. Relative water content and specific leaf area tended to be higher in waterlogging and declined in drought stresses. The result clearly indicated that white jabon seedlings were more adaptive to waterlogging than to drought stresses. Moreover, there were different responses to drought and waterlogging stresses between the twelve populations. Kampar, Gowa, Kuala Kencana and OKI populations exhibited higher growth performance and stress tolerance index to be adapted to waterlogging stress, while Gowa, Pomalaa and Kampar population had relatively better growth performance in the drought stress.

Keywords: Anthocephalus cadamba, genotype, growth, population, stress tolerance index

Reference: