

ABSTRAK

Tanaman kelor (*Moringa oleifera* Lamk) merupakan tanaman tropis yang memiliki banyak manfaat dan kegunaan. Pengembangan tanaman kelor didukung beberapa kajian tentang identifikasi keragaman genetik antar aksesori tanaman kelor berdasarkan karakter morfologis dan penanda DNA; Kajian mengenai sifat fisiologis, hasil dan kualitas hasil aksesori kelor yang ditanam pada lingkungan yang berbeda, serta Kajian ketahanan kekeringan pada tanaman kelor. Penelitian ini terdiri dari 3 kegiatan. Tujuan penelitian pertama untuk mengetahui keragaman genetik antar aksesori tanaman kelor di Madura dan Jawa berdasarkan karakter morfologis dan penanda DNA. Penelitian dilaksanakan di Madura terdiri dari Kabupaten Sumenep, Pamekasan, Sampang, Bangkalan; Jawa terdiri dari Kabupaten Blora, Bantul, dan Sleman. Total ada 36 aksesori. Metode deskriptif dengan teknik survei secara *purposive sampling* berdasarkan populasi pohon kelor terbanyak. Keragaman genetik dari 36 aksesori kelor yang berasal Madura maupun Jawa dari karakter morfologi memiliki keragaman 0,47 dan karakter genetik memiliki keragaman 0,36, sehingga keragaman genetiknya rendah dan diharapkan pada saat dibudidayakan mempunyai potensi produksi dan hasil yang sama. Tujuan penelitian kedua untuk mengkaji karakter fisiologis, hasil dan kualitas hasil aksesori kelor yang ditanam pada lingkungan yang berbeda di Madura. Penelitian menggunakan Rancangan Oversite sub sampling. Faktor satu : lokasi tanam terdiri dari Bluto dan Guluk-guluk. Faktor dua : aksesori kelor terdiri dari tanaman kelor dengan tangkai daun hijau dan ungu. Tanaman kelor yang tumbuh di Bluto memiliki pertumbuhan yang sama dengan di Guluk-guluk, karakter fisiologis dan hasil berupa daun lebih rendah tetapi mempunyai kualitas berupa kuersetin lebih baik. Tujuan penelitian ketiga untuk mengkaji pertumbuhan akar dan tajuk kelor asal biji dan stek batang pada kondisi cekaman air. Penelitian menggunakan Rancangan Petak Terbagi. Petak utama yaitu selang waktu pemberian air : 2, 4, dan 8 hari sekali, dan Anak petak yaitu bahan tanam : biji dan stek batang. Pemberian air 8 hari sekali (KL 14,7%) hanya menurunkan pertambahan tinggi tanaman, namun tidak menurunkan hasil tanaman kelor. Bahan tanam dari biji memberikan diameter lebih besar tetapi jumlah tunas dan jumlah daun lebih sedikit dari stek batang. Bahan tanam biji memberikan diameter, volume, dan gaya cabut akar lebih tinggi dibandingkan tanaman kelor dengan bahan tanam stek batang. Nilai indeks toleransi cekaman (ITC) dari bahan tanam biji maupun stek batang termasuk dalam kategori toleran.

Kata-kata kunci : aksesori, biji, cekaman kekeringan, kelor, stek

ABSTRACT

Moringa oleifera Lamk is a tropical plant that has many benefits and uses. Moringa plant development was supported by several studies on the identification of genetic variability among Moringa plant accessions based on morphological characters and DNA markers. Also, there are studies on the physiological characteristics, yields, and quality of the yield of Moringa accessions planted in different environments, as well as studies of drought resistance in Moringa plants. The first objective of this research was to determine the genetic diversity between the accessions of Moringa plants in Madura and Java, Indonesia, based on morphological characters and DNA markers. This study conducted at Madura consisting of Sumenep, Pamekasan, Sampang, Bangkalan Regencies, while in Java consisted of Blora, Bantul, and Sleman with a total of 36 accessions. Data collected through surveys with purposive sampling based on the most Moringa tree population, then it was analyzed by descriptive method. Morphological and genetic diversity of Moringa on the study sites showed a low diversity with values of 0.47 and 0.36, respectively, so it was expected the Moringa plants would produce the same production potential and yield when the plant were cultivated. The second research objective was to examine the physiological character, yields, and quality of Moringa accessions planted in different environments in Madura using the Oversight sub-sampling design with two factors : planting sites and type of accessions. The first factor consisted of Bluto and Guluk-guluk planting sites. Meanwhile, the second factor was Moringa with green and purple petiole. Moringa plants that grew in Bluto had the same growth rate as in the Guluk-guluk. Moringa plants in Bluto had lower physiological characteristics and yields but had higher quercetin. The third objective was to examine the growth of root and shoot from seeds and stem cuttings in water stress conditions. The research was arranged in the Split Plot Design. The main plot was the interval of water supply i.e 2, 4, and 8 days, and subplots was planting material : seeds and stem cuttings. Treatment of watering every eight days (MC 14.7%) only reduced the plant height increment but did not reduce the yield of Moringa plants. Seed planting material gave a larger diameter, but the number of shoots and the number of leaves were less than those of in the stem cuttings. Seed planting material gave a higher diameter, volume, and root pulling force than those of in Moringa plants with stem cutting material. The stress tolerance index (ITC) value of seed planting material and stem cuttings were included in the tolerant category.

Keywords: Moringa, accessions, cuttings, drought stress, seeds.