

## IDENTIFIKASI KARAKTER MORFOLOGI SAAT FASE VEGETATIF AWAL PADA 12 KLON UBI KAYU (*Manihot esculenta* L.)

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### Intisari

Produksi ubi kayu di Indonesia mengalami penurunan dari tahun 2011 hingga 2015. Salah satu penyebabnya adalah terbatasnya varietas unggul yang berdaya hasil tinggi. Karakter yang perlu dikembangkan adalah produktivitas tinggi, kadar pati tinggi, dan kadar asam sianida (HCN) rendah. Upaya yang perlu dilakukan yaitu melakukan suatu program pemuliaan dengan syarat keragaman genetik tanaman yang tinggi melalui pendekatan sifat morfologi tanaman yaitu karakterisasi. Penelitian ini bertujuan mengidentifikasi, mengetahui keragaman karakter morfologi dan tingkat kemiripan karakter morfologi antar klon. Penelitian dilaksanakan pada bulan Mei 2017 sampai Agustus 2017 di lahan yang berada di Dusun Donokerto, Kecamatan Turi, Kabupaten Sleman, Daerah Istimewa Yogyakarta dengan Rancangan Acak Kelompok Lengkap satu faktor perlakuan berupa klon sebanyak 12 antara lain klon Hijau Kulit Putih, Trembesi, Tangkai Merah Pekat, Pucuk Merah, Batang Cokelat, Mentik Putih, Ampat Bulan, Batang Merah, Pandemir, Meni, Karet, dan Gemblong, serta 3 blok sebagai ulangan. Pengamatan karakter kualitatif antara lain warna tunas, warna daun muda, warna daun saat berumur 4 BST, warna tangkai daun, warna tulang daun, warna batang, bentuk daun, bentuk percabangan; dan karakter kuantitatif antara lain tinggi tanaman, panjang tangkai, diameter tangkai, diameter batang, jumlah lobus, panjang daun, lebar daun, luas daun, dan laju fotosintesis masing-masing klon. Data dianalisis sidik ragam signifikan 5%, dilanjutkan uji Tukey. Hubungan kekerabatan 12 klon ditentukan melalui analisis cluster. Varian lingkungan ( $\sigma^2 e$ ), varian genetik ( $\sigma^2 g$ ), varian fenotipe ( $\sigma^2 p$ ), dan heritabilitas dihitung berdasarkan nilai harapan kuadrat tengah untuk melihat keragaman genetik. Hasil penelitian menunjukkan terdapat keragaman karakter morfologi yang dipengaruhi faktor genetik dan lingkungan, dan terdapat tingkat kemiripan karakter morfologi antar klon.

Kata kunci : ubi kayu, karakterisasi, keragaman, heritabilitas.

## IDENTIFICATION OF MORPHOLOGICAL CHARACTERS AT EARLY VEGETATIVE PHASE OF 12 CLONES OF CASSAVA (*Manihot esculenta* L.)

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### *Abstract*

Production of cassava in Indonesia decreased from 2011 to 2015. One reason is the limited variety of high yielding clones. The character that needs to be developed is high productivity levels of starch, and levels of hydrogen cyanide (HCN). Efforts that need to be done is to do a program of breeding with high genetic plant diversity requirements through the plant morphological character approach that is characterization. This research aims to identify and know the diversity of morphological character, and similarity any clones. Research was carried out at Mei 2017 until August 2017 in Donokerto, Turi, Sleman, Yogyakarta with a Randomized Complete Block Design (RCBD) with 12 clones as treatment that is Hijau Kulit Putih, Trembesi, Tangkai Merah Pekat, Pucuk Merah, Batang Cokelat, Mentik Putih, Ampat Bulan, Batang Merah, Pandemir, Meni, Karet and Gemblong; and three blocks as the replicates. The character of qualitative characters such as color of apical leaves, young leaf color, leaf color at 4 BST, petiole color, color of leaf vein, color of stem exterior, shape of central leaflet, branching habit; and quantitative character such as plant height, length of petiole, diameter of petiole, diameter of stem, number of leaf lobes, length of leaf lobe, width of leaf lobe, leaf area, and rate of photosynthetic each clone. Variance analysis of quantitative data 5% significant level, followed by the Tukey test. The similarity among 12 the clones are determined through cluster analysis. Variance of error ( $\sigma^2 e$ ), variance of genetic ( $\sigma^2 g$ ), variance of phenotypes ( $\sigma^2 p$ ), and heritability is calculated based on the variance estimate. The results showed there were the diversity of characters that is affected by genetic factors and the environment, and there is a similarity character morphology between the clones.

Key word : Cassava, characterization, diversity, heritability.