

**KARAKTERISASI MORFOLOGI, MOLEKULAR, DAN
PERTUMBUHAN ANGGREK HIBRIDA (*Vanda tricolor* Lindley var.
Suavis ASAL MERAPI X *Vanda limbata* Blume ASAL NTB)**

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INTISARI

Telah dilakukan persilangan antara dua jenis anggrek lokal berkarakter unggul yaitu *Vanda tricolor* Lindley var. *Suavis* asal Merapi dengan *V. limbata* Blume asal NTB baik sesama jenis maupun antar jenis. Hibridanya diharapkan mewarisi perpaduan sifat unggul kedua tetuanya sehingga memiliki habitus yang kokoh, sistem perakaran kuat, berbunga menarik dan berkualitas baik, serta adaptif terhadap lingkungan bersuhu tinggi. Sebanyak 12 tanaman hasil persilangan berumur ± 3 tahun ditumbuhkan di dalam rumah kaca dan dikarakterisasi menurut sifat morfologi organ vegetatif berupa habitus, akar, dan daun, serta pertumbuhannya dengan pengamatan tinggi tanaman, panjang, lebar, dan jumlah daun, serta jumlah akar, setiap 2 minggu sekali selama 16 minggu. Sifat unggul tanaman dianalisis secara molekular pada lokus gen *POHI* (*Phalaenopsis Orchid Homeobox1*; gen kunci pembentuk tunas) dan *HSP70* (*Heat Shock Protein70*; gen ketahanan terhadap suhu tinggi) dengan teknik PCR menggunakan primer *POHIF1R1* dan primer *HSP70F2R2*. Hasil penelitian menunjukkan bahwa terdapat perbedaan yang signifikan pada pertumbuhan panjang dan lebar daun tanaman anggrek Vt X Vl. Amplifikasi fragmen DNA pada lokus gen *POHI* tanaman anggrek hibrida menghasilkan pita DNA dengan ukuran 100, 250, dan 600 bp yang merupakan pita gabungan dari kedua tetuanya. Sedangkan amplifikasi fragmen gen *HSP70* pada anggrek hibrida diperoleh 2 fragmen DNA berukuran sekitar 350 dan 600 bp yang sesuai dengan pola amplifikasi *HSP70* pada hasil persilangan sendiri *V. tricolor*. Hal ini menunjukkan bahwa keberadaan gen *HSP70* pada *V. tricolor* lebih dominan dibanding pada *V. limbata* di dalam genom tanaman hibridanya.

Kata kunci: karakterisasi, morfologi, molekular, pertumbuhan, hibrida

**CHARACTERIZATION OF MORPHOLOGY, MOLECULAR, AND
GROWTH OF ORCHID HYBRIDS (*Vanda tricolor* Lindley var. *Suavis*
FROM MERAPI X *Vanda limbata* Blume FROM NTB)**

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ABSTRACT

To get a superior orchid hybrid, cross breeding between *Vanda tricolor* var. *Suavis* Lindley from Merapi and *Vanda limbata* Blume from NTB had been conducted. *V. tricolor* and *V. limbata* are two species of Indonesian local orchids which has potential characters. The hybrid of these two orchid species are expected to inherit their parental characters such as a vigorous habitus, a good system of roots, unique and qualified flowers, and adaptable to high temperature environment. The method was used twelve of 3 years old orchid plants as the result of self and cross-pollinated plants. The hybrid plants were maintained in a greenhouse and then characterized by morphological, molecular, and physiological analysis. Morphology of vegetative organs including its habitus, roots, and leaves, and also characteristics of its growth were analyzed by measuring the plant height, length, width, and number of leaves, and the number of roots every 2 weeks for 16 weeks. Molecular analyses was carried out by comparing the amplified DNA fragment in *POH1* and *HSP70* gene loci using PCR techniques with *POH1F1R1* primers and *HSP70F1R1* primers. The results showed that there were significantly differences in the length and width of leaves of Vt X Vl orchid hybrids. Amplified DNA fragment of the *POH1* gene locus showed that hybrids exhibit DNA bands with various size, i.e. 100, 250, and 600 bp which indicated a combination pattern of *POH1* in both parental plants. Amplification of DNA fragment in *HSP70* gene showed that the hybrid plants have two DNA fragments with size 350 and 600 bp in lengths, which were correspond to *HSP70* gene fragments in self-pollinated *V. tricolor*. This fact indicates that the existence of *HSP70* gene in *V. tricolor* is more dominant than that of *V. limbata* in the hybrid plants.

Keywords: characterization, morphology, molecular, growth, hybrids