

**Karakter Fenotip dan Molekular
Melon (*Cucumis melo* L. 'Hikapel Aromatis')
Berdasarkan *Inter-Simple Sequence Repeat***

Oleh :
Nugroho Nofriarno
14/364881/BI/09241

INTISARI

Kultivar Hikapel Aromatis merupakan hasil *breeding* antara ♀ 'Hikapel' dan ♂ 'Hikadi Aromatik'. Penelitian mengenai karakter fenotip dan molekular ini dilakukan untuk menyediakan data pendukung kultivar 'Hikapel Aromatis' sebagai kultivar unggulan. Penelitian ini bertujuan untuk mempelajari variasi genetik melon 'Hikapel Aromatis' dibandingkan dengan melon 'Hikapel', 'Hikadi Aromatik' dan 'Gama Melon Parfum'. Penelitian ini dilakukan di Pusat Inovasi Agroteknologi Universitas Gadjah Mada (PIAT UGM), Kalitirto, Berbah, Sleman, Yogyakarta dan Laboratorium Genetika dan Pemuliaan Fakultas Biologi UGM. Metode penelitian untuk pengamatan morfologis meliputi penanaman, koleksi sampel buah dan analisis karakter fenotip kualitatif dan kuantitatif. Karakter kuantitatif ditinjau berdasarkan perbandingan morfometri, bobot buah dan jumlah biji. Karakter kualitatif meliputi warna buah, aroma, tekstur kulit dan rasa. Metode yang dilakukan untuk pengamatan molekular *Inter-Simple Sequence Repeat* (ISSR) meliputi isolasi/ekstraksi DNA, spektrofotometri, amplifikasi DNA target dengan PCR dan visualisasi pita DNA hasil elektroforesis. Karakter molekular dianalisis menggunakan spektrofotometri (uji kuantitatif) dan visualisasi pita DNA hasil elektroforesis serta rekonstruksi dendogram (uji kualitatif) menggunakan program *Multi-Variate Statistical Package* MVSP 3.1. Hasil PCR 5 primer yaitu UBC 809, UBC 810, UBC 811, UBC 812 dan UBC 841 diperoleh 24 pita DNA polimorfik dan 49 pita DNA monomorfik. Berdasarkan hasil penelitian tersebut diketahui bahwa melon 'Hikapel Aromatis' memiliki hubungan kekerabatan dekat dengan melon 'Hikapel'. Indeks similaritas melon 'Hikapel Aromatis' dengan melon 'Hikapel' pada *Jaccard Coefficient* adalah 91,8%.

Kata kunci: 'Hikapel Aromatis', ISSR, molekular, variasi genetik

**Phenotype and Molecular Characters
in Melon Fruit (*Cucumis melo* L. *Hikapel Aromatis*)
Using Inter-Simple Sequence Repeat**

By:
Nugroho Nofriarno
14/364881/BI/09241

ABSTRACT

Hikapel Aromatis cultivar is a melon produced from breeding between ♀ *Hikapel* with ♂ *Hikadi Aromatik*. This study of the phenotypic and molecular characters was carried out to support *Hikapel Aromatis* cultivar as a superior cultivar. This study aimed to analyze the genetic variation of melon *Hikapel Aromatis* and have been compared with *Hikapel*, *Hikadi Aromatik* and *Gama Melon Parfum*. The research was conducted in Pusat Inovasi Agroteknologi Universitas Gadjah Mada (PIAT-UGM), Kalitirto, Berbah, Sleman, Yogyakarta and Laboratory of Genetics and Breeding Faculty of Biology UGM. Observation of morphological characters such as cultivated, collection of fruit sample and analysis of qualitative and quantitative characters were conducted. Quantitative characters were determined by weight of fruit, morfometry and seed count. While qualitative characters were determined by color of fruit, scent, thickness of fruit and texture. The method of molecular characterization Inter-Simple Sequence Repeat (ISSR) included DNA isolation, spectrophotometry, amplification of DNA target used PCR, visualization of DNA target used electrophoresis. Molecular characters were analysed using spectrophotometry (quantitative test) and visualization of electrophoresis results where as reconstruction of dendogram (qualitative test) using program *Multi-Variate Statistical Package* MVSP 3.1. PCR used the 5 random primers such as UBC 809, UBC 810, UBC 811, UBC 812 and UBC 841 resulted 24 polymorphic DNA bands and 49 monomorphic DNA bands. Similarity indexes melon *Hikapel Aromatis* with melon *Hikapel* was 91,8% using *Jaccard Coefficient*.

Keywords: *Hikapel Aromatis*, ISSR, molecular, genetic variation