



Perakitan Melon Hibrida dan Karakterisasi Molekular

(*Cucumis melo* L. 'Tacapa Green Black')

Emy Setyani

13/349039/Bi/9123

INTISARI

Melon (*Cucumis melo* L.) adalah salah satu tanaman hortikultura. Melon digemari petani untuk dibudidayakan karena tingginya permintaan di pasaran. Akan tetapi sebagian besar biji yang dibudidayakan adalah biji impor sehingga harga melon di pasaran menjadi mahal. Oleh karena itu, Indonesia harus mampu memproduksi benih melon unggul secara mandiri yang mampu bersaing dengan benih impor. Penelitian ini menggunakan melon 'Tacapa Green Black', 'Tacapa Gold' dan 'Tacapa Silver'. Ketiga kultivar ini merupakan melon rakitan Laboratorium Genetika dan Pemuliaan Fakultas Biologi UGM. Penelitian ini bertujuan untuk mengetahui karakter fenotip indukan jantan, betina serta hibrida 'Tacapa Green Black', mengetahui variasi genetik ketiganya dibandingkan melon kultivar 'Tacapa Gold' dan 'Tacapa Silver' berdasar analisis hasil PCR-ISSR, serta mengetahui kekerabatan antara 'Tacapa Green Black', 'Tacapa Gold' dan 'Tacapa Silver'. Penelitian dilakukan dengan cara penanaman melon, persilangan antara galur jantan dan betina 'Tacapa Green Black', karakterisasi fenotip 'Tacapa Green Black', uji variasi genetik menggunakan 4 primer ISSR yaitu UBC-807, UBC-808, UBC-811 dan UBC-824 selanjutnya data diolah menggunakan program MVSP. Penelitian menunjukkan bahwa karakter fenotip indukan jantan melon 'Tacapa Green Black' antara lain rerata berat buah 2,8 kg, muncul bunga jantan pertama kali umur 21 HST (Hari Setelah Tanam), jumlah bunga jantan 13, jumlah bunga hermaphrodit 5 pada saat 23 HST. Karakter indukan betina melon 'Tacapa Green Black' antara lain mempunyai rerata berat buah 3,7 kg, muncul bunga jantan pertama kali umur 23 HST, jumlah bunga jantan 8, jumlah bunga hermaphrodit 8 pada saat 23 HST sedangkan karakter fenotip hibrid 'Tacapa Green Black' antara lain rerata berat buah 2 kg, rerata jumlah biji 416 biji, muncul bunga jantan pertama umur 22 HST, jumlah bunga jantan 8, dan bunga hermaphrodit 8 pada saat 23 HST. Analisis variasi genetik indukan jantan, indukan betina dan melon hibrida 'Tacapa Green Black' menggunakan 4 primer ISSR menghasilkan 47 pita DNA monomorfik. Analisis variasi 'Tacapa Green Black', 'Tacapa Gold', dan 'Tacapa Silver' menggunakan 4 primer ISSR menunjukkan 47 pita DNA dengan 9 pita polimorfik dan 38 pita monomorfik. Tingkat kekerabatan 'Tacapa Green Black', dengan 'Tacapa Gold' dan 'Tacapa Silver' sebesar 91,7% sedangkan kekerabatan 'Tacapa Gold' dan 'Tacapa Silver' sebesar 95,2%.

Kata kunci : melon, 'Tacapa Green Black', 'Tacapa Gold', 'Tacapa Silver', variasi genetik, PCR-ISSR



Assemble and Molecular Characterization of Hybrid Melon (*Cucumis melo* L.) 'Tacapa Green Black'

By Emy Setyani

13/349039/Bi/9123

ABSTRACT

Melon (*Cucumis melo* L.) is one of horticulture plant. Melon is cultivated because high demand in the market. Almost all of the seeds cultivated by farmers are imported seeds. This makes the price of melon in Indonesia is expensive. Therefore Indonesia should produce seed of melon with high quality and can compete with imported seeds. This research used 3 cultivar melon 'Tacapa Green Black', 'Tacapa Gold' and 'Tacapa Silver'. These were melon cultivars that were produced by Genetic and Breed Laboratory, Faculty of Biology, UGM. The purposes of this research were to determine the phenotype characters of male, female parents and hybrid cultivar melon 'Tacapa Green Black', to analyze genetic variation between 'Tacapa Green Black', 'Tacapa Gold' and 'Tacapa Silver' using PCR-ISSR and to study similarity between 'Tacapa Green Black', 'Tacapa Gold' and 'Tacapa Silver'. This research was conducted by growing the three melon cultivars, crossing male and female parents of 'Tacapa Green Black', characterizing phenotype character of 'Tacapa Green Black', test genetic variation use 4 ISSR primer UBC-807, UBC-808, UBC-811 dan UBC-824 then scoring with MVSP program. This research showed phenotype characters of male parent 'Tacapa Green Black' average weight of fruit 2,8 kg, 423 seeds, time of male flower emerged at 21 day after planting, has 13 male flowers, and 5 hermaphrodite flowers at 23 days after planted. Characters of female parent 'Tacapa Green Black' are having average weight of 3,7 kg, 559 seeds, time of male flower emerged at 23 day after planting, has 8 male flowers, has 8 hermaphrodite flowers at 23 days after planted. Characters hybrid 'Tacapa Green Black' are having average fruit weight 2 kg, 416 seeds, flower emerge at 22 day after planting, has 8 male flowers, and has 8 hermaphrodite flowers. Genetic analysis between male, female parent and hybrid 'Tacapa Green Black' using 4 primers ISSR produced 47 bands of monomorphic DNA. Genetic analysis between 'Tacapa Green Black', 'Tacapa Gold', dan 'Tacapa Silver' using 4 primers ISSR produced 47 bands of monomorphic DNA with 9 bands polymorphic and 38 bands monomorphic. The similarity between 'Tacapa Green Black' with 'Tacapa Gold' dan 'Tacapa Silver' is 91,7% and similarity of 'Tacapa Gold' dan 'Tacapa Silver' is 95,2%.

Keyword : melon, 'Tacapa Green Black', 'Tacapa Gold', 'Tacapa Silver', genetic variation, PCR-ISSR