

**KESTABILAN KARAKTER FENOTIP DAN DETEKSI GEN
KETAHANAN TERHADAP JAMUR TEPUNG PADA MELON
(*Cucumis melo* L.) KULTIVAR TACAPA SILVER**

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INTISARI

Melon (*Cucumis melo* L.; *Cucurbitaceae*) merupakan tanaman buah yang telah banyak dikembangkan melalui pemuliaan tanaman. Melon Tacapa *Silver* merupakan hasil persilangan antara PI 371795 dengan Action 434 dan di *test cross* dengan Action 434. Melon Tacapa *Silver* selain unggul karena resisten terhadap jamur tepung juga unggul dalam kualitas buah. Tujuan penelitian ini adalah untuk mengetahui kestabilan karakter fenotip dan deteksi gen ketahanan terhadap jamur tepung pada melon kultivar Tacapa *Silver*. Tacapa *Silver* diproduksi oleh Laboratorium Genetika, Fakultas Biologi UGM. Penelitian uji kebenaran kultivar meliputi uji karakterisasi fenotip dan nutrisi serta deteksi ketahanan gen terhadap jamur tepung dengan *Sequence Characterized Amplified Regions* (SCARs). Melon pembandingan adalah melon Tacapa (*Green Black*) GB, Action dan Aramis. Hasil penelitian menunjukkan bahwa melon kultivar Tacapa *Silver* memiliki karakter fenotip hasil rekombinasi kedua induknya yaitu bentuk penampang batang silindris, warna batang hijau gelap, bentuk daun bulat, warna daun hijau gelap, bentuk bunga rotate, warna kelopak bunga hijau, warna mahkota bunga kuning, warna benang sari dan kepala putik hijau kekuningan, tipe buah berbiji, bentuk buah bulat telur, warna kulit buah hijau gelap, warna daging buah hijau, net jelas dan berbentuk memanjang kecil, daging buah renyah dan rasanya manis dengan brix 9-11, bentuk biji ellips dan warna biji coklat kekuningan. Berdasarkan hasil rekapitulasi sidik ragam dapat dilihat bahwa terdapat beda nyata antara keempat kultivar melon, yaitu pada karakter diameter horizontal buah, panjang daun, lebar daun, diameter batang, gula total, vitamin C, kadar air, daya simpan, diameter ujung buah, diameter vertikal buah dan kemanisan buah. Terdapat sifat melon Tacapa *Silver* yang menjadi penciri utama yaitu warna kulit buah hijau gelap (*dark green*) RHS 137 A, alur net jelas dengan alur net memanjang dan kecil dan daging buah berwarna hijau kuning muda (*light yellow green*) RHS 149 D. Keunggulan melon Tacapa *Silver* adalah memiliki ukuran dan berat buah yang besar yaitu $2.953,75 \pm 467,21$ gram. Ditemukan gen ketahanan terhadap jamur tepung ditandai dengan munculnya pita DNA pada 1058 bp. Berdasarkan pengujian tersebut, maka dapat disimpulkan bahwa melon kultivar Tacapa *Silver* diakui kebenarannya sebagai kultivar baru tanaman melon di Indonesia.

Kata kunci: kultivar Tacapa *Silver*, kestabilan karakter fenotip, gen ketahanan

**STABILITY OF PHENOTYPE CHARACTERS AND DETECTION OF
POWDERY MILDEW RESISTENCE GENE IN MELON (*Cucumis melo* L.)
TACAPA SILVER CULTIVAR**

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ABSTRACT

Melon (*Cucumis melo* L.; *Cucurbitaceae*) is a fruit crop that has been developed through plant breeding. Tacapa Silver is derived from crosses between PI 371795 with Action 434 and test cross with Action 434. Tacapa Silver is resistant to powdery mildew and also superior in quality fruit. The purpose of this research was to know stability of phenotype characters and detection of powdery mildew resistance gen in melon Tacapa Silver cultivar. Tacapa Silver is one of the cultivar developed by the Genetics Laboratory, Faculty of Biology, Universitas Gadjah Mada. Cultivar validity test included analysis of phenotype and nutrition. Whereas, detection of resistant gene against powdery mildew was conducted using Sequence Characterized Amplified Regions (SCARs) analysis. The comparator cultivar used in this research were Tacapa Green Black (GB), Action 434, and Aramis. The result showed that Tacapa Silver had phenotype characteristics yielded from recombination of its parent i.e stem longitudinal section was cylindric and dark green coloured, leaf form was round and dark green coloured, flower form was rotate, sepal was green coloured, petal was yellow coloured, stamen and pistill was yellow green coloured, drupe fruit, fruit form was ellipse, fruit peel was dark green, clear net with small and longitudinal form, fruit fruit flesh was light yellow green, crispy, and sweet flavoured, seed form was ellipse and yellow brown coloured. Based on significance test, there was very significance different on characters of horizontal diameter, lenght and width of leaf, stem diameter, total sugar, vitamine C, water content, and tenacity time. There was significance different on characters of upper end of fruit, fruit vertical diameter, and sweetness grade. Based on those characters, Tacapa Silver had five unique characters differentiated with other cultivars, i.e fruit peel was dark green coloured RHS 137 A, clear net with small and longitudinal form, fruit flesh was light yellow green coloured RHS 149 D. Beside that, it had excellent characteristic compared with other cultivar, i.e size and weight have of a large fruit that is $2953.75 \pm 467,21$ gram. It was found DNA bands at 1058 bp for resistance gene of powdery mildew in Tacapa Silver. Based on those test, it can be concluded that melon cultivar Tacapa Silver is declared “right” as new cultivar melon in Indonesia.

Key word: Tacapa Silver, stability of phenotype characters, resistance gene