

**PEWARISAN DAN DETEKSI GEN KETAHANAN *POWDERY MILDEW* PADA TANAMAN STROBERI (*Fragaria* spp.) DI INDONESIA BERDASARKAN *SEQUENCE CHARACTERIZED AMPLIFIED REGION***

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**INTISARI**

Tanaman stroberi telah dibudidayakan di berbagai negara dengan nilai ekonomis yang tinggi. Budidaya stroberi di Indonesia, terganggu oleh *powdery mildew* (embun tepung). *Powdery mildew* merupakan penyakit yang disebabkan oleh infeksi hifa jamur *Podosphaera aphanis* pada organ-organ tanaman, dapat mengurangi produksi dan menurunkan nilai jual buah, diperlukan peningkatan kualitas bibit tanaman tahan *powdery mildew* dengan penanda molekular untuk mengetahui adanya gen ketahanan *powdery mildew* tanaman stroberi secara akurat dan efektif. Tujuan dari penelitian ini adalah untuk mengetahui pola pewarisan dan mendeteksi gen ketahanan terhadap *powdery mildew* pada berbagai kultivar stroberi di Indonesia, serta variasi gen ketahanan *powdery mildew*. Hasil penelitian menunjukkan fragmen DNA yang teramplifikasi dengan penanda SCAR berukuran 316 bp pada gel agarose 2% dapat mendeteksi gen ketahanan *powdery mildew* pada tanaman stroberi. Hasil tes *Chi-square* menunjukkan bahwa gen ketahanan terhadap *powdery mildew* dipengaruhi oleh dua gen aditif untuk ketahanan dan satu gen epistasis untuk kerentanan. Variasi gen 14 kultivar menunjukkan tingkat similaritas dengan sekuen kultivar acuan 'Soulhyang' 97,9% - 99,1% dengan 6 situs polimorfisme.

Kata Kunci: *Fragaria* spp., gen ketahanan, pewarisan sifat, *powdery mildew*, SCAR

**INHERITANCE AND DETECTION OF POWDERY MILDEW  
RESISTANCE GENE ON STRAWBERRY PLANTS (*Fragaria* spp.) IN  
INDONESIA BASED ON SEQUENCE CHARACTERIZED AMPLIFIED  
REGION**

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**ABSTRACT**

Strawberry plants have been cultivated in various countries with high economic value. The cultivation of strawberries in Indonesia disturbed by powdery mildew. Powdery mildew is a disease caused by fungal hyphae *Podosphaera aphanis* infection in plant organs, it can reduce production and decrease fruit selling value, it is necessary to improve the quality of powdery mildew resistant seeds, so that molecular markers are used to determine the genes of powdery resistance mildew on strawberry plants that are accurate and effective. The objectives of this study were to determine the pattern of inheritance and to detect the powdery mildew resistance gene in various strawberry cultivars in Indonesia, and to align powdery mildew sequence from various cultivars. The results of the research showed that amplified DNA fragments with SCAR markers could be detected in cultivars strawberries that have resistant and susceptible phenotypes grown on farm, as 316 bp DNA bands in 2% agarose gell. The results of the Chi-square test showed the resistance gene to powdery mildew controlled by two additive genes for resistance and one for epistasis genes. The gene variation of the 14 cultivars showed 97,9% - 99,1% similarity level with the 'Soulhyang' reference sequence with 6 polymorphism sites.

Keywords: *Fragaria* spp., inheritance, powdery mildew, resistance gene, SCAR