

**EKSPLORASI GEN KETAHANAN (*RPM1*, *RPS2*) DAN BEBERAPA GEN
BIOSINTESIS KATEKIN (*PAL*, *DFR*, *ANS*, *LAR*) PADA KLON
TEH (*Camellia sinensis*) PAGILARAN YANG TERINFEKSI
PENYAKIT BLISTER BLIGHT**

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INTISARI

Klon teh yang dikembangkan oleh Pagilaran diindikasikan memiliki beberapa karakter ketahanan yang berbeda ketika terjadi infeksi Blister Blight. Karakter klon PGL 6 dan PGL 11 diindikasikan tahan, dan klon PGL 4 dan PGL 15 agak tahan terhadap infeksi Blister Blight. Penelitian ini bertujuan untuk mengetahui ekspresi gen ketahanan (*RPM1*, *RPS2*) pada klon tahan dan agak tahan pada serangan infeksi Blister Blight dan mengetahui ekspresi gen biosintetik katekin (*PAL*, *DFR*, *ANS*, *LAR*) pada daun teh yang terserang infeksi Blister Blight menggunakan *quantitative real-time* PCR (qRT-PCR). Sampel daun teh klon PGL 4, PGL 6, PGL 11 dan PGL 15 dipetik dari perkebunan teh Pagilaran, Batang – Jawa Tengah menggunakan metode purposive sampling untuk dijadikan sampel komposit pada setiap klon. Hasil analisis *quantitative real-time* PCR, pada klon tahan (PGL 11) memiliki nilai ekspresi gen ketahanan *RPM1* lebih tinggi dibanding klon agak tahan (PGL 15 dan PGL 4). Selain itu, pada klon tahan (PGL 6 dan PGL 11) juga memiliki nilai ekspresi gen ketahanan *RPS2* lebih tinggi dibanding klon agak tahan (PGL 15 dan PGL 4). Ekspresi gen biosintesis katekin pada gen *PAL*, *DFR*, dan *LAR* lebih rendah pada daun yang terinfeksi Blister Blight dibandingkan dengan daun sehat. Kesimpulan yang diperoleh adalah infeksi Blister Blight dapat meningkatkan ekspresi dari gen *RPM1* dan *RPS2* dan dapat menekan ekspresi gen biosintesis katekin pada gen *PAL*, *DFR* dan *LAR*.

Kata Kunci: Teh, Blister Blight, Ekspresi Gen, Klon PGL, Klon Tahan

**THE EXPLORATION OF RESISTANCE GENES (*RPM1*, *RPS2*)
AND SEVERAL GENES OF CATECHIN BIOSYNTHESIS
(*PAL*, *DFR*, *ANS*, *LAR*) AT PAGILARAN'S CLONES OF
TEA (*Camellia sinensis*) INFECTED BY BLISTER BLIGHT DISEASE**

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ABSTRACT

Tea clones developed by Pagilaran are indicated to have several different resistance characteristics when The Blister Blight infection occurs. PGL 6 and PGL 11 clone characters are indicated to be resistant, whereas PGL 4 and PGL 15 clones are slightly/moderate resistant to the infection. This study aimed to determine the expression of resistance genes (*RPM1*, *RPS2*) in the moderate and significantly resistant clones toward Blister Blight infection and to know the expression of the catechin biosynthetic genes (*PAL*, *DFR*, *ANS*, *LAR*) in tea leaves that have Blister Blight infection by using Quantitative Real-Time PCR (qRT-PCR). Tea leaf samples from PGL 4, PGL 6, PGL 11 and PGL 15 clones were picked from the tea plantations in Pagilaran, Batang – Central Java by purposive sampling method to be later used as a composite sample from each clone. The results of Quantitative Real-Time PCR analysis in the resistance clone (PGL11) has higher expression values in *RPM1* gene than the moderately resistant clones (PGL 15 and PGL 4). Furthermore, the resistance clones (PGL 6 and PGL 11) have higher expression values in *RPS2* gene than the moderately resistant clones (PGL 15 and PGL 4). On the other hand, the catechin biosynthetic gene expression in *PAL*, *DFR*, and *LAR* genes were lower at leaves infected with Blister Blight compared with healthy leaves. The conclusion obtained was that Blister Blight infection could increase the expression of *RPM1* and *RPS2* genes and could suppress the expression of catechin biosynthetic genes in *PAL*, *DFR* and *LAR* genes.

Keyword: Tea, Blister Blight, Gene Expression, Clone PGL, Resistant Clone