Optimasi Bahan Sterilan untuk Kultur in Vitro Eksplan Tangkai Daun Hevea brasiliensis (Willd. ex Adr. de Juss) = Optimization of Sterilants for in Vitro Culture of Petiole Explants of Hevea brasiliensis (Willd. ex Adr. de Juss)

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Abstrak

<p>Tanaman Hevea brasiliensis merupakan tanaman yang banyak ditanam di Indonesia, karena lateks yang bernilai ekonomi tinggi. Alternatif metode konvensional budidaya H. brasiliensis adalah dengan metode kultur in vitro. Namun, penelitian kultur in vitro memiliki hambatan berupa rentannya kontaminasi, baik dari eksplan, medium, dan alat bahan yang diapaki. Oleh karena itu, tujuan penelitian ini adalah untuk mengoptimasi dan memilih antara enam jenis sterilan dan kombinasinya yang paling efektif terhadap kontaminasi dalam kultur tangkai daun H. brasiliensis. Hipotesis yang diajukan adalah perlakuan perendaman dengan NaOCl 5,25%, H₂O₂ 20%, dan alkohol 70% selama masing-masing lima menit adalah perlakuan sterilisasi paling efektif dalam menghadapi kontaminasi. Eksplan tangkai daun diberi lima perlakuan dan satu kontrol, yakni kontrol dengan perendaman NaOCl 5,25%, perlakuan 1 dengan perendaman NaOCl 5,25% dan H₂O₂ 20%, perlakuan 2 dengan perendaman NaOCl 5,25% dan alkohol 70%, perlakuan 3 dengan perendaman NaOCl 5,25% dua kali dan H₂O₂ 20%, perlakuan 4 dengan perendaman NaOCl 5,25%, alkohol 70%, dan H₂O₂ 20%, dan perlakuan 5 dengan perendaman NaOCl 5,25% dua kali dan alkohol 70%. Empat perlakuan memiliki efektivitas dalam mencegah kontaminasi, yakni perendaman dengan NaOCl 5,25% dan H₂O₂ 20%, perendaman dengan NaOCl 5,25% sebanyak dua kali dan H₂O₂ 20%, perendaman NaOCl 5,25%, alkohol 70%, dan H₂O₂ 20%, serta perendaman NaOCl 5,25% dua kali dan alkohol 70%. Sementara itu, perlakuan NaOCl 5,25% dan alkohol 70% berhasil menahan pencokelatan pada persentase 50% di minggu kedelapan. Oleh karena itu, perlakuan yang lebih baik dalam mengurangi kontaminasi dan pencokelatan adalah perendaman dengan NaOCl 5,25% dan alkohol 70%.
.....Hevea brasiliensis is a plant that is widely grown in Indonesia, because its latex has high economic value. An alternative to the conventional method of cultivating H. brasiliensis is the in vitro culture method, but this method has a disadvantages, especially its risk to contamination from explant, medium, and tools. So, the aim of this research is to optimize and select between six types of sterilants and their combinations that are most effective against contamination in the culture of H. brasiliensis leaf stalks. The hypothesis proposed is that soaking treatment with 5.25% NaOCl, 20% H₂O₂ and 70% alcohol for five minutes each is the most effective sterilization treatment in dealing with contamination. Petiole explants were given five treatments and one control, namely control by immersion in 5.25% NaOCl, treatment 1 by immersion in 5.25% NaOCl and 20% H₂O₂, treatment 2 by immersion in 5.25% NaOCl and 70% alcohol, treatment 3 by soaking in 5.25% NaOCl twice and 20% H₂O₂, treatment 4 by soaking in 5.25% NaOCl, 70% alcohol and 20% H₂O₂, and treatment 5 by soaking in 5.25%

NaOCl twice and 70% alcohol. Four treatments were effective in preventing contamination, namely soaking with 5.25% NaOCl and 20% H₂O₂, soaking twice with 5.25% NaOCl and 20% H₂O₂, soaking with 5.25% NaOCl, 70% alcohol, and 20% H₂O₂ %, as well as soaking twice in 5.25% NaOCl and 70% alcohol. Meanwhile, treatment with 5.25% NaOCl and 70% alcohol succeeded in preventing browning at a percentage of 50% in the eighth week. Therefore, a better treatment in reducing contamination and browning is soaking with 5.25% NaOCl and 70% alcohol.