The Effect of Red Ginger Rhizome Bio Antiseptic Concentration on In Vitro Cocoa Explants Sterilization

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ABSTRACT

Sterilization is the first step that determines the success of in vitro plant propagation. Contamination by fungi and bacteria is a main problem that is often encountered. Cocoa (Theobroma cacao L) is a woody plant that is difficult to propagate in vitro because it has high phenol and latex, making it difficult to sterilize. The solution that can be done is to use appropriate sterilizing materials such as bio-antiseptic red ginger rhizome which contains antibacterial compounds such as flavonoids and saponins. This research aimed to determine the effect of the bio-antiseptic red ginger rhizome as a natural sterilant on cocoa explants. The research design used a Completely Randomized Factorial Design (RALF) with 2 factors. The first factor was the origin of the cocoa flower bud staminodes explants (E1) and cacao flower crowns (E2). The second factor was the concentration of bio-antiseptic red ginger rhizome 10% (S1), 15% (S2), 20% (S3), and 25% (S4). The research data were analyzed by Analysis of Variance and then further tested using BNT α = 5%. The results are that E1S1 and E2S3 gave the best with all live explants without contamination and browning.

Keywords: red ginger rhizome, cocoa plant, in vitro