

ABSTRACT

PRECISION TEST FOR DETERMINING ANTIOXIDANT ACTIVITY USING THE DPPH METHOD WITH AQUADES SAMPLING SOLVENT

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In this study, the aim was to determine the results of % relative standard deviation (%RSD) in ascorbic acid powder dissolved in distilled water using the DPPH method. The samples used were ascorbic acid and DPPH (1-1-Diphenyl-1-Picrylhydrazyl) as indicators of the reduction process of antioxidant compounds. This process begins with taking 10 mg of ascorbic acid with concentration (1, 2, 3, 4, and 5 ppm). As a reagent, DPPH 40 ppm was used. Antioxidant activity testing was carried out by reacting 1 ml of ascorbic acid concentration (1, 2, 3, 4, and 5 ppm) with 2 ml of DPPH 40 ppm. Then the absorbance was measured using visible spectrophotometry with a wavelength of 400-800 nm. This test was carried out 3 times in replication. The research results show that the IC₅₀ is $8,4274 \pm 0,4162$, so the IC₅₀ is very strong because the smaller the IC₅₀, the stronger the antioxidant compound. Meanwhile, the RSD measurement results obtained were not good, namely 4.9389, so the precision value was determined using the Horwitz equation. The research results show that the precision test with the Horwitz equation meets the requirements, namely 5,8044. From the Horwitz value that has been determined, it can be concluded that the validation test method for determining antioxidant activity using the DPPH method carried out in this study has good precision, because the Horwitz value is within the acceptance requirement value, namely $\% \text{ RSD} < \frac{1}{2} \text{ CV Horwitz}$.

Keywords: method precision, antioxidant, DPPH