

Comparative analysis of DNA extraction efficiency from strawberry, blueberry and bilimbi using a DIY method

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Structured Abstract

Background: Modern science has created numerous methods for extracting DNA, including the do-it-yourself option, which uses kitchen items such as detergent, meat tenderizer, and salt. The DIY method's growing popularity stems from its ease of use and low cost. This study aims to examine the extraction efficiency of strawberries, blueberries, and bilimbi and assess the quantity and quality of the extracted DNA.

Methods: The DIY method used in this study is adapted to the approach presented by the University of Utah. However, the original procedure was modified to get better results. The extracted DNA was then quantified using a spectrophotometer.

Results: White clumps were present in all samples, with strawberries forming the most clumps. The DNA content increased considerably after adjusting the blending stage to mashing with cold distilled water and fresh fruit. Except for strawberries, which attained a purity within the range of 1.8 to 2.0, the DNA quality remained below the ideal range of 1.8 before and after optimization.

Conclusion: The results show that the DIY technique is highly effective for strawberries. It is also successful for other fruits such as blueberry and bilimbi with minimal modifications, yielding high concentration and high-quality DNA. These findings underscore the importance of DIY DNA extraction technologies in various research applications.

Keywords: DIY method, DNA quantification, strawberry, blueberry, bilimbi

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