

ABSTRACT

THE COAGULANT ABILITY OF SABA BANANA PEEL EXTRACT IN REDUCING RIVER WATER TURBIDITY

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Xii + 104 Pages + 9 Tables + 2 Figures + 10 Appendices

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This research was motivated by the high turbidity of the Batanghari River in Jambi City, caused by suspended particles and household waste, making it difficult to obtain clean water that meets health standards. The objective of this research was to determine the effectiveness of Saba banana peels as a natural coagulant in reducing river water turbidity at varying doses of 8%, 10%, and 12%.

The method used was a quasi-experimental design with a pretest-posttest- only design. A 250 mL sample of river water was treated with an extract from Saba banana peels, and its turbidity level was measured using a turbidity meter at the Jambi City Regional Health Laboratory, with a neutral pH control (pH 6–8).

The results indicated that the 8% dose reduced turbidity by 67%, the 10% dose by 75%, and the 12% dose by 86%. The one-way ANOVA test yielded a significance value of 0.000 ($p < 0.05$), indicating a significant difference between the treatments.

In conclusion, Saba banana peel extract is an effective natural coagulant for reducing river water turbidity, with a dose of 12% being the optimal. Further research is recommended to combine other natural ingredients with water purification to enhance its effectiveness.

Keywords: Saba banana peel, river water, turbidity, natural coagulant.



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ABSTRAK

KEMAMPUAN KOAGULAN EKSTRAK KULIT PISANG KEPOK DALAM PENURUNAN KEKERUHAN PADA AIR SUNGAI

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Xii + 104 Halaman, 9 Tabel, 2 Bagan, 10 Lampiran

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Penelitian ini dilatarbelakangi oleh tingginya kekeruhan air Sungai Batanghari di Kota Jambi yang disebabkan oleh partikel tersuspensi dan limbah rumah tangga, sehingga sulit memperoleh air bersih yang memenuhi standar kesehatan. Tujuan penelitian ini adalah mengetahui efektivitas ekstrak kulit pisang kepok sebagai koagulan alami dalam menurunkan kekeruhan air sungai dengan variasi dosis 8%, 10%, dan 12%.

Metode yang digunakan adalah quasi experiment dengan rancangan pretest- posttest only design. Sampel air sungai sebanyak 250 ml diberi perlakuan ekstrak kulit pisang kepok dan diukur tingkat kekeruhannya menggunakan Turbidity Meter di Laboratorium Kesehatan Daerah Kota Jambi, dengan pengendalian pH netral (6–8).

Hasil penelitian menunjukkan bahwa dosis 8% menurunkan kekeruhan sebesar 67%, dosis 10% sebesar 75%, dan dosis 12% sebesar 86%. Uji One Way ANOVA menghasilkan nilai signifikansi 0,000 ($p < 0,05$), yang berarti terdapat perbedaan nyata antarperlakuan.

Kesimpulannya, ekstrak kulit pisang kepok efektif digunakan sebagai koagulan alami untuk menurunkan kekeruhan air sungai, dan dosis 12% merupakan yang paling optimal. Disarankan penelitian lanjutan mengkombinasikan bahan alami lain untuk meningkatkan efektivitas penjernihan air.

Kata kunci: Kulit pisang kepok, air sungai, kekeruhan, koagulan alami.