

ABSTRAK

Air merupakan sumber kehidupan bagi setiap makhluk oleh karena itu, manajemen serta konservasi air menjadi sangat krusial bagi kehidupan manusia. Selain itu, kualitas air termasuk ke dalam Sustainable Development Goals (SDGs). "Clean Water and Sanitation" adalah poin ke-6 dari SDGs yang berkaitan dengan kualitas air dan sanitasi yang layak. Untuk mencapai hal ini, penambahan kaporit digunakan dengan tujuan untuk menjernihkan serta membersihkan air.

Namun, penambahan kaporit yang mengandung gas klorin dapat memberikan dampak negatif bagi manusia dan lingkungan. Selain gas klorin, di sisi lain terdapat gas metana yang juga memiliki dampak negatif. Rendahnya kualitas pengelolaan limbah organik menyebabkan gas metana terus bertambah dan menjadi polusi udara. Akan tetapi, hal ini sudah mulai teratasi melalui pemanfaatan limbah organik menjadi eco-enzyme.

Eco-enzyme yang bersifat asam dan merupakan hasil fermentasi dapat digunakan sebagai disinfektan. Eco-enzyme berpotensi sebagai bahan baku kaporit organik yang mampu menjernihkan air serta mengurangi jumlah bakteri di dalam air. Selain itu, kombinasi antara eco-enzyme dan daun jambu biji yang memiliki sifat antibakteri juga mampu menjadi bahan baku pembuatan kaporit organik.

Hasil dari penelitian diperoleh bahwa sampel A adalah sampel terbaik dengan kandungan eco-enzyme 7 ml dan ekstrak jambu biji 3 ml. Berdasarkan pengujian sifat fisika produk, kaporit organik memiliki umur simpan maksimal <7 hari. Adapun dosis kaporit organik yang terbaik adalah 1 pil/5 liter air karena proses penjernihannya lebih efisien. Dari hasil pengamatan kualitas fisika air setelah diberi perlakuan dengan kaporit organik, diperoleh bahwa penambahan kaporit organik mampu menjernihkan air dan memisahkan suspensi dari air secara merata, serta menghilangkan bau tidak sedap pada air. Berdasarkan hasil pengamatan kualitas kimia, diperoleh bahwa nilai rata-rata pH air adalah 6 yang tergolong normal meskipun telah bercampur dengan eco-enzyme yang bersifat asam. Berdasarkan pengamatan biologis, penambahan kaporit organik mampu mengurangi jumlah Coliform yang terdapat di dalam air secara signifikan, namun belum mampu mengurangi jumlah Coliform secara menyeluruh sehingga belum bisa digunakan untuk kebutuhan air minum, tetapi bisa digunakan untuk kebutuhan sanitasi.

Kata Kunci : SDGs, Kaporit, Gas Klorin, Gas Metana, Eco-enzyme, Coliform.

ABSTRACT

Water is the source of life for every creature, therefore, water management and conservation are very crucial for human life. In addition, water quality is included in the Sustainable Development Goals (SDGs). "Clean Water and Sanitation" is the 6th point of the SDGs relating to water quality and proper sanitation. To achieve this, the addition of chlorine is used with the aim of purifying and cleaning water.

However, the addition of chlorine containing chlorine gas can have a negative impact on humans and the environment. In addition to chlorine gas, on the other hand there is methane gas which also has a negative impact. The low quality of organic waste management causes methane gas to continue to grow and become air pollution. However, this has begun to be resolved through the use of organic waste into eco-enzymes.

Eco-enzymes that are acidic and fermented can be used as disinfectants. Eco-enzyme has the potential as an organic chlorine raw material that can purify water and reduce the number of bacteria in the water. In addition, the combination of eco-enzyme and guava leaves that have antibacterial properties is also able to be a raw material for making organic chlorine.

The results of the study obtained that sample A was the best sample with an eco-enzyme content of 7 ml and guava extract 3 ml. Based on testing the physical properties of the product, organic chlorine has a maximum shelf life of <7 days. The best dose of organic chlorine is 1 pill / 5 liters of water because the purification process is more efficient. From the results of observations of the physical quality of water after being treated with organic chlorine, it was obtained that the addition of organic chlorine was able to purify water and separate the suspension from water evenly, and eliminate unpleasant odors in water. Based on the results of chemical quality observations, it was obtained that the average pH value of water is 6 which is classified as normal even though it has been mixed with acidic eco-enzymes. Based on biological observations, the addition of organic chlorine can reduce the amount of Coliform contained in the water significantly, but has not been able to reduce the amount of Coliform as a whole so that it cannot be used for drinking water needs, but can be used for sanitation needs.

Keywords : SDGs, Chlorine, Chlorine Gas, Methane Gas, Eco-enzyme, Coliform.