

### **Abstrak**

Kebutuhan manusia yang paling penting adalah air. Namun, akses terhadap air bersih masih menjadi masalah serius di Indonesia. Seiring dengan perkembangan dan laju pertumbuhan penduduk di Indonesia, kebutuhan akan kualitas dan kuantitas air bersih semakin meningkat (Puspitasari, 2009). Selain itu, pencemaran air sungai akibat pembuangan limbah rumah tangga dan badan industri juga menjadi sumber masalah ketersediaan air bersih. Rendahnya ketersediaan air bersih berdampak buruk pada semua sektor, termasuk kesehatan seperti kolera, kurap, kudis, diare/disentri, tifus, dan penyakit lainnya. Metode pelaksanaannya Penelitian ini adalah penelitian observasional eksperimental analitik dengan rancangan pre-test dan post-test control group study. Adapun variabel bebas dari penelitian ini yaitu kangkung air, pasir pantai, kerikil, arang sawit, ijuk dan variabel terikat berupa kadar Parameter Fisik, Parameter Kimia dan Parameter Mikrobiologi

**Kata Kunci** : Fitoremediasi, Ramah Lingkungan, Air Bersih, Kualitas Air, Pencemaran Air

### **Abstract**

Water is one of the elements of the environment that is critical for the development and growth of all living things, including people. Due to rapid population expansion, not everyone in society has access to clean water. (Alihar 2018). In addition, river water pollution due to household and industrial waste disposal also became a source of problems in clean water availability. The low availability of clean water adversely affected all sectors, including health, such as cholera, ringworm, scabies, diarrhea/dysentery, typhus, and other diseases. This research was an analytic, experimental, and observational study with a pretest-posttest control group design. The independent variables of this study included water spinach, beach sand, gravel, palm shell charcoal, and palm fiber. Meanwhile, the dependent variables comprised the levels of physical parameters, chemical parameters, and microbiological parameters. Water Spinach (*Ipomoea Aquatica*) could reduce the content of Chemistry Parametric, Physics Parametric and Microbiology Parametric. After the testing, based on physical parameters, the muddy water became clearer while dissolved oxygen was higher, indicating a good water quality on Day-28. In addition, the chemical parameters, i.e., COD; BOD; Pb; detergent; fat and oil; and bacteriological examination on *E.coli* indicated a decrease compared to all elements in Day-0. It suggested significant change in the water quality from Day-0 to Day-28 through the filtration of phytoremediation kit. The benefits from this research are: can decrease muddy water, can grow Water Spinach easy to use, priceless and beneficial. Further recommendation from this research is The Phytoremediation kits must be cleaned every week to prevent moss.

**Keyword:** Phytoremediation, Eco Friendly, Clean Water, Water Quality, Water Pollution