REUSING WASTE BOTTLES AS WATER FILTERS

Devi Sekar Palupi*, Seris Mona, Nesa Sogy Tywula, Aprilla Sari, Silvia Fransisca
Rokania College of Teacher Training and Education, Indonesia
*devisekarpalupi01@gmail.com

Abstract

Clean water is essential for everyone in both household needs and the business world. Health management or world health organization is needed to get clear water. The objective of this technique application is to provide a valuable lesson that can be used in the community to address clean water issues. From the practice of using used bottles as clean water filters, the water that was initially cloudy turned into clear, odorless water. It is because the materials used are coral, stone, gravel, sand, palm fiber, and charcoal.

Keywords: Used Bottles, Clean Water, Health Treatment

INTRODUCTION

Water is the most abundant chemical compound in nature. However, as the human quality of living rises, so does the need for water. In addition, water has recently become an "expensive" commodity. It is difficult to find a source of clean water that is utilized as raw material for clean water that is free of pollution in big cities. It is because a lot of water is taken in by industrial operations that require a specific quantity of water to support their production (The Republic of Indonesia, 2004). Land that is a water reservoir, on the other hand, has been closed for various uses such as housing and industry, despite the land's function as a vehicle for storing water for the future.

The Ministry of Health of the Republic of Indonesia requires 60 liters of clean water per person per day for the community. The water must meet the requirements set out in the regulation of the Minister of Health no. 32 of 2017 concerning environmental health standards and drinking water health requirements for sanitation, swimming pools, solus per aqua. In addition, for public baths as follows clear, colorless, tasteless, odorless, non-toxic, neutral pH and free of microorganisms (Minister of Health of the Republic of Indonesia, 2017).

METHOD

The implementation of practical activities will take place on November 20, 2021, on the Rokania College of Teacher Training and Education. There are several methods used in the practice, namely:

1) Discussion: After the material has been explained, a discussion will continue to better understand the material that has been presented

2) Practice: In this simple water purification practice, the researcher takes videos and photos as documents.
RESULTS AND DISCUSSION

Materials and tools used are sand, gravel, fibers, coral, charcoal, stones, plastic bottles of used mineral water (World Health Organization, 2011). The implementation method for making a simple water filter is (Mantell, 1951):

1) Used mineral water plastic bottles measuring 1,500 ml or 1.5 liters are used as a filter for cloudy water, coral as the first water filter, palm fiber as the second water filter, charcoal as the third filter, gravel as the fourth filter, followed by sand as the second filter. The fifth filter use stone as the last water filter. The reservoir is beneficial for storing filtered water. It can use mineral water bottles or other tools.

2) Working steps: Wash all the ingredients that will be used, then dry them first. Cut the bottom or bottom of a 1,500 ml used mineral water bottle using a cutter or scissors. The position of the bottle is that we put the bottle cap at the bottom hold the bottle cap so that it doesn't collapse when we fill the ingredients for the water filtration process.

3) Arrange the ingredients in order, namely: the bottom one is coral, palm fiber, charcoal, gravel, sand, and the last is stone. Place the receptacle at the bottom of the bottle for water filtration results. Slowly pour a few glasses of cloudy water through a filter bottle. Do it continuously until the water turns clearer. If the filter results are still unclear, do the filtering again to get clear water.

4) After filtering the water using a simple tool, it is continued by making a report on the observations. One part of the observation is to contain the results of observation and conclusions. The results of observations of water filtration using a simple tool are where the initially cloudy water becomes clear. It is because the materials used can purify the water.

Coral, stones, gravel, and sand are used to reduce dirty or solid substances without losing the nutritional value of the water. Meanwhile, the function of charcoal in the filtering process is as activated carbon in filtering water to purify water. Besides, it can remove odors from the water. The last one is palm fiber, which filters particles that have escaped from the previous layer and level the flowing water.

CONCLUSION

Coral, stone, palm fiber, gravel, sand, and charcoal are readily available and environmentally beneficial materials for this simple water filter. Filtering dirty water does not need to use a variety of materials. The most important thing is the correct composition, and the ingredients are easy to get. One-time filtering can produce clear water, and after it is done repeatedly will get clear water.

REFERENCES

Republik Indonesia. Undang-Undang Nomor 7 Tahun 2004 tentang Sumber Daya Air.
Using Used Bottles as Clean Water Filter