Nanoporous of waste avian eggshell to reduce heavy metal and acidity in water

Publons ID	19694715
Wos ID	WOS:000454309200023
Doi	10.1016/j.scp.2018.10.002
Title	Nanoporous of waste avian eggshell to reduce heavy metal and acidity in water
First Author	
Last Author	
Authors	Setiawan, BD; Rizqi, O; Brilianti, NF; Wasito, H;
Publish Date	DEC 2018
Journal Name	SUSTAINABLE CHEMISTRY AND PHARMACY
Citation	16
Abstract	The use of groundwater for drinking water usually faces major constraints in terms of water quality. Groundwater can be contaminated by heavy metals dissolved in groundwater as well as other chemicals that cause increased water acidity levels. This study aims to develop nanoporous eggshells that can absorb heavy metals and neutralize acid content in water. This experimental study performed by preparation of nanopore eggshells from avian and selected the optimum formulation for heavy metal absorption and neutralized water acidity using conductivity test and pH meter. The selected formulation of nanoporous eggshell will be characterized using scanning electron microscope. The performance of nanoporous eggshell also evaluated. The result showed that the duck eggshell has a better effectiveness than chicken and quail eggshell. In addition, the optimum formula for nanoporous eggshell preparation consists of 0.3 M sodium hypochlorite and 0.1 M HCl with percent absorption of heavy metals by 26.83 and neutralization of acids by 59.18. The characteristic of nanoporous eggshell indicated that the nanopore-sized less than 1.0 mu m. Nanoporous eggshells have a better ability in absorbing heavy metal and neutralizing the water acidity.
Publish Type	Journal
Publish Year	2018
Page Begin	163
Page End	167
Issn	
Eissn	2352-5541
Url	https://www.webofscience.com/wos/woscc/full-record/WOS:000454309200023
Author	Dr.nat.techn Apt HENDRI WASITO, S.Farm, M.Sc.