PATNA WOMEN'S COLLEGE 1940

IRIS
Journal for Young Scientists
ISSN 2278 – 618X **(Print)**
ISSN 2278 – 6384 **(Online)**

http://www.patnawomenscollege.in/journal

A Novel Method to use the Waste Products of Wood apple (shell and seed) for Phytoremediation and Nutritional Purpose

• **Harsha Tripathy** • **Sufiya Khatoon**
• **Hena Naz**

Received : November 2014
Accepted : March 2015
Corresponding Author : Hena Naz

Abstract : *Present paper deals with the study of shell of wood apple for remediation of Cr(VI) and Cd(II) from aqueous solution. It also deals with the evaluation of the nutritional contents of the wood apple seeds, which is quite often discarded in general. The study suggested that the shell can be used effectively in remediation of Cr and Cd as during study, the level of the stock solutions of these metals showed decline WAS could adsorbed about 88% Cr(VI) and about 92% Cd(II) in a stock of 90 mgL^{-1} under acidic conditions. The extent of removal varies with different process parameters like pH, agitation time, adsorbent dosage and initial concentration. On the other hand, the seeds of wood apple is an unconventional source of protein and the research was undertaken to study the seed protein content of the wood apple fruit in the form of Seed Protein Content (SPC) containing about 75g protein and several other nutritional components per 100g SPC. Hence the present research aims to utilize the waste biomass of wood apple (shell and seed) to human welfare instead of its free disposal that results in increased level of environmental pollutions.*

Key Words : *Wood Apple Shell (WAS), heavy metal removal, aqueous solution, seed protein content (SPC).*

Harsha Tripathy
B.Sc. III year, Botany (Hons.),
Session : 2012-2015, Patna Women's College,
Patna University, Patna, Bihar, India

Sufiya Khatoon
B.Sc. III year, Botany (Hons.),
Session : 2012-2015, Patna Women's College,
Patna University, Patna, Bihar, India

Hena Naz
Assistant Professor, Deptt. of Botany,
Patna Women's College, Bailey Road,
Patna – 800 001, Bihar, India.
E-mail : henanaz64@gmail.com

Introduction:

Water pollution by heavy metals has become a serious global concern because metals are non-biodegradable and are toxic to human beings. An increase in pollution has consequently led to increase in the effluent discharge into the aquatic ecosystem. Ground, surface, and processing waters frequently contain inadequate amount of dissolved heavy metals from sources like mines, factories, and other industries.