An Investigation into the Urea Absorption Efficiency of Absorbent Pads Derived from Corn Cobs.

Keetapat Rinsabai[1], Nuttatida Laopet[1], Thanjira Saisasawat[1 *]and Pornnapa Dokmai[2]

[1]*Princess Chulabhorn Science High School Sa Kaeo, Watthana Nakhon Subdistrict, Watthana Nakhon District, Sa Kaeo 27160, Thailand*

**E-mail: 6700037@pcshssk.ac.th*

Abstract

This study aims to investigate the urea adsorption efficiency of absorbent pads made from corn cobs and chitosan, and to examine the adsorption performance of these materials. Corn cobs obtained from farmers were used in the experiment. The study was divided into two parts. In the first part, absorbent pads were fabricated from corn cobs and chitosan, combined with corn starch. The corn cobs were ground into the smallest possible particle size. Then, an appropriate formulation was determined to produce absorbent pads that could maintain their structural integrity. The ratio of corn cobs to chitosan was 100 grams to 00 grams.

In the second part, urea adsorption was tested by immersing the absorbent pads into containers containing urea solutions of known concentrations. The concentrations tested were 00, 00, and 00, with a contact time of 15 minutes. After that, the absorbent pads were removed, and the remaining urea solution was titrated to determine the residual concentration after adsorption by the corn cob–chitosan absorbent pads.

Keywords: corn cobs, chitosan, corn starch**,** urea adsorption, bioadsorbent