

Decortication of *eichhornia crassipes* (pontederiaceae) fibers for the production of multifilament non-absorbable surgical suture

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Exhibiting fibrous and antimicrobial characteristics, *Eichhornia crassipes* (water hyacinth) presents an edge to be used in medicine. The study aims to provide a new source of multifilament surgical sutures from decorticated petiole fibers of water hyacinth. The fibers were braided and autoclaved for sterilization. After which, diameter measurement, sterility test, and heavy metal test were done. Tensile strength, knot strength of the sutures and wound tensile strength were measured using a tensiometer. Surgical incisions done under anesthesia on dorsolateral areas of six male albino rabbits (*Oryctolagus cuniculus*) were sutured. Silk suture was used as the positive control. Observation was done for 7 days to grade skin reactions. Skin samples were then excised after euthanasia was done. The samples were then subjected to histopathological examination. Statistical analyses comparing the sutures were done using independent t-tests. Differences in diameter and tensile strength of both sutures were statistically significant ($p < 0.05$). Differences in knot tensile strength and wound tensile strength of both sutures were not statistically significant ($p > 0.05$). Edema, erythema and wicking were absent in both sutures. Dehiscence was seen in 2 wounds with silk suture; 1 wound with water hyacinth suture. Histopathology showed varied degrees of tissue reaction. However, presence of non-representative samples made the test inconclusive. Conclusively, sutures from *Eichhornia crassipes* are physically comparable to silk.

Biography

Gironella Rochelle is a 20-year old college student taking BS Pharmacy, Major in Clinical Pharmacy at the University of Santo Tomas, Philippines. She is a preceptor of the Skin Care Clinic of the Clinical Pharmacy Society. Ms. Gironella and her colleagues made an undergraduate research focused on innovation of a surgical suture from water hyacinth. Recently, the said undergraduate research won 2nd place in the Student Research Oral Presentation Competition of the 7th Philippine National Health Research System Week. In addition, with her other colleagues she has also constructed a systematic review about Clinical Pharmacy Intervention in Geriatric Patients with Polypharmacy

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