Development of Wound Dressing Product from Giant Sensitive Plant (Mimosa pigra) and Fermented Tako Extract (Diospyros rhodocalyx)

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At present, wound dressing is in high demand. However, the process of manufacturing and improving the desired properties of the wound dressing is usually expensive and uses many chemicals that are not environmental friendly. In order to lower the cost of the process, in this work, local weed Giant sensitive plant (Mimosa pigra) was explored for manufacturing low-cost and environmentally friendly dressing. First, paper was made of Giant sensitive plant through a conventional method. Second, the fermented extract derived from a local plant, called Tako (Diospyros rhodocalyx), was used to coat the paper to develop efficient wound dressing with anti-microbial property. Our work contains 2 parts. The first part is the investigation of the anti-bacterial ability of the Tako fermented extract. We found that the anti-bacterial ability of the fermented extract from Tako fruit is similar to the anti-bacterial ability of common antibiotics. The second part of the experiment is to test the effect of coating different concentrations of the fermented extract on the wound dressing made of the Giant sensitive plant. It was found that the dressing coated with the fermented extract from Tako fruit exhibited mechanical, water retentive, and anti-bacterial properties according to the standard use of wound dressing. The findings suggest that the wound dressing made of the Giant sensitive plant and coated by Tako fermented extract is efficient for utilization. The inexpensive, environmental friendly dressing has desired anti-bacterial, mechanical, and water retentive properties.