ISOLASI DAN KARAKTERISASI PATI DARI UBI JALAR PUTIH (*Ipomoea batatas* L.) SERTA POTENSINYA SEBAGAI BAHAN DASAR STIKER PEMBALUT LUKA

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ABSTRAK

Stiker pembalut luka saat ini berbahan kain kasa, film, hidrogel dan lain-lain. Bahan-bahan in dipilih karena kemampuannya untuk mendorong penyembuhan sambil memberikan penghalang terhadap infeksi. Stiker pembalut luka berbahan kain kasa yang paling umum dipasarkan, namun memiliki permasalahan, yaitu sulit dilepaskan, menimbulkan trauma pada luka, serta kurangnya kemampuan menyerap cairan dan mencegah infeksi. Oleh karena itu, diperlukan material yang lebih aman, efektif, dan ramah lingkungan. Pati dari ubi jalar putih (*Ipomoea batatas* L.) berpotensi dijadikan sebagai bahan dasar stiker pembalut luka karena ketersediaannya yang melimpah, harga ekonomis serta bersifat biodegradabel. Perbedaan metode isolasi dapat memengaruhi karakteristik pati yang dihasilkan. Penelitian ini bertujuan untuk mengetahui pengaruh variasi rasio ubi jalar putih - akuades saat isolasi pati terhadap karakteristik pati hasil isolasi, serta potensi dari pati hasil isolasi sebagai bahan dasar stiker pembalut luka. Isolasi pati dan kemudian dikarakterisasi berdasarkan analisa struktur, persen *yield,* kelarutan, *swelling*, serta kandungan amilosa. Hasil menunjukkan rasio 1:3 memiliki karakterisasi lebih baik, yaitu nilai persen *yield* 12,70%*,* kelarutan 0,197 g/mL, *swelling power* 7,9620%, serta kandungan amilosa 34,48%. Pati hasil isolasi kemudian dipakai untuk pembuatan stiker pembalut luka yang dicampurkan dengan kitosan dan gliserol melalui metode *solution casting.* Karakterisasi stiker pembalut luka dilakukan melalui uji *swelling*, absorpsi, ketebalan, kuat tarik, elongasi. Dari penelitan ini didapatkan nilai uji *swelling* 477,726 g/g dan 389,933 g/g, nilai absorpsi 80,73% dan 73,299%, ketebalan 0,16 mm, kuat tarik 6,14 MPa dan 9,901 MPa serta elongasi 37,8 % dan 89,2 %. Diketahui dari hasil penelitian ini menunjukkan bahwa pati ubi jalar putih memiliki potensi untuk dijadikan sebagai stiker pembalut luka yang ditunjukkan pada sampel pati-gliserol dan pati-gliserol-kitosan.

Kata kunci: ubi jalar putih, pati, rasio padatan-pelarut, stiker pembalut luka, kitosan

ISOLATION AND CHARACTERIZATION OF STARCH FROM WHITE YAMS (Ipomoea batatas* L.*) AND ITS POTENTIAL AS A BASIC MATERIAL FOR WOUND DRESSING

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ABSTRACT

Currently, wound dressing stickers are made of gauze, film, hydrogel, and others. These materials are chosen for their ability to promote healing while providing a barrier against infection. The most commonly marketed wound dressing stickers are made of gauze, but they have issues such as being difficult to remove, causing trauma to the wound, and lacking the ability to absorb fluids and prevent infection. Therefore, materials that are safer, more effective, and environmentally friendly are needed. Starch from white yams (Ipomoea batatas L.) has the potential to be used as a base material for wound dressing stickers due to its abundant availability, economical price, and biodegradable nature. Differences in isolation methods can affect the characteristics of the resulting starch. This study aims to determine the effect of varying the ratio of white sweet potato to aquades during starch isolation on the characteristics of the isolated starch, as well as the potential of the isolated starch as a base material for wound dressing stickers. Isolation of starch and subsequent characterization based on structural analysis, percent yield, solubility, swelling, and amylose content. The results show that the 1:3 ratio has better characterization, with a percent yield of 12.70%, solubility of 0.197 g/mL, swelling power of 7.9620%, and amylose content of 34.48%. The isolated starch was then used to make wound dressing stickers mixed with chitosan and glycerol through the solution casting method. The characterization of the wound dressing stickers was conducted through swelling, absorption, thickness, tensile strength, and elongation tests. From this research, swelling test values of 477.726 g/g and 389.933 g/g, absorption values of 80.73% and 73.299%, a thickness of 0.16 mm, tensile strengths of 6.14 MPa and 9.901 MPa, and elongations of 37.8% and 89.2% were obtained. The results of this study indicate that white sweet potato starch has the potential to be used as a wound dressing sticker, as shown in the starch-glycerol and starch-glycerol-chitosan samples.

Keywords: yams, starch, solid-solvent ratio wound dressing sticker, chitosan