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Extraction and characterization of pectin from banana (*musa acuminata* × *balbisiana*) peel with different percentage of sugar

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Pectin was extracted from banana (*Musa acuminata* × *balbisiana*) peels by traditional method. Banana peel is an underutilized waste produced from banana processing in Malaysia. The suitable ratio of banana peel to water for pectin extraction was 1:0.8 as it was proved to successfully produced gel with addition of sugar and lemon juice. Four formulations of gels with different percentage of sugar (20.8%, 27.7%, 41.6% and 48.6%) were analyzed to study the effect of sugar on the characteristic of gels in terms of spreadability, tenderness, colour, texture, water activity and moisture content of gels. The spreadability of gel was determined using Line Spread test. As the formulation went up by the increasing percentage of sugar, the distance of gel spread was decrease. Gel tenderness was determined in terms of percentage sag and it showed a significantly decrease ($P \leq 0.05$) as the percentage of sugar increase from formulation 1 to 4. The colour and texture analysis showed a significant different between each formulations. Both water activity and moisture content of gels decrease as the formulation went up by the increasing percentage of sugar. Watermelon jam added with gel form from banana peel was made to test the ability of gel.

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