

Utilization of Whey Dangke into High Quality Edible Film as a Solution for Environmental Pollution in Indonesia

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Today, the problems related to waste and waste are still unsolved. The National Plastic Action Partnership (NPAP) recorded that around 4.8 million tons of plastic waste in Indonesia is not managed properly. In addition, industrial waste such as whey has not been widely used so that it has a high potential to cause environmental pollution. For this reason, this research was carried out to overcome this problem by making edible films from whey dangke with the addition of carrageenan, 35% sorbitol plasticizer and red galangal (*Alpinia purpurata*) essential oil as quality enhancers. This research is expected to reduce plastic waste and industrial waste by utilizing dangke whey processed into environmentally friendly edible films. This study uses qualitative methods as material content analysis and quantitative in determining the concentration of quality enhancing ingredients. Dangke whey waste was chosen as the main ingredient of edible film because 80-90% of the milk volume is whey and contains about 55% of the total nutrition of milk. The addition of carrageenan is intended to reduce cracks because the surface is flat and to balance the flexibility, 35% sorbitol is added. To inhibit the activity of bacteria (*E. coli* and *S. aureus*) 0.1% red galangal essential oil (*A. purpurata*) was added. From here, edible films can be produced by using whey dangke waste which is bacteria resistant, minimally cracked, but still flexible and friendly to health.