

ABSTRACT

(LITERATURE REVIEW)

UTILIZATION OF RICE PLANT WASTE AS RAW MATERIAL FOR BIOPLASTIC MANUFACTURING

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Environmental problems that never end is the amount of plastic waste. The increasing population will increase the use of natural resources and energy on a large scale which results in the creation of waste that accumulates in the surrounding environment in very large quantities. Plastic waste is waste that is difficult to decompose in the soil. Plastic waste ranks second after kitchen/organic waste. Plastic is a material that is often used by humans because it is versatile and practical.

Pratiwi, et al., (2016) testing of cellulose and lignin content showed the average cellulose content of rice straw was about 22.07% and the average lignin content was about 3.48%. For the characterization of bioplastics in the absence of new functional groups, the bioplastics formed were not homogeneous, the water resistance value was 93.873% and the tensile strength measurement value was 13.8%. Cengristitama and Nur Insan, (2020) the levels of cellulose and glycerol with the addition of chitosan have an optimum ratio of 1:4 (w/v). The results of the characteristics of bioplastics have a water resistance value of 83.37%, the results of organoleptic textures are a little rough, the aroma is slightly smelly and the color is slightly clear, the biodegradation results have a weight loss of 80% and the fastest degradation time is 8 days and the highest degradation value is 71, 42 mg/day with a ratio of cellulose and glycerol 1:6. Setiawan, et al., (2021) cellulose and lignin content with delignification of 42.29% and 13.13% characterization of bioplastics showed an uneven surface, there were parts of the matrix separated from the fibers. The results of TG-DTA showed a reduction in bioplastic mass of 81.01% at a temperature of 550°C, a tensile strength value of 8.773 Mpa with a degradation time of 10 days with the largest degradation value of 99.9%.

In this literature review, rice straw waste can be processed and used as a basic material/raw material for making plastic (bioplastic) which can be degraded (biodegradable) so that it is friendly to the environment.

Keywords: Rice straw, bioplastic, biodegradation.