

## Biodegradasi Bioplastik Berbasis Pati Menggunakan Isolat Fungi Indigenous Asal Tempat Pembuangan Akhir Gunung Tugel, Kabupaten Banyumas

<b>Title</b>	Biodegradasi Bioplastik Berbasis Pati Menggunakan Isolat Fungi Indigenous Asal Tempat Pembuangan Akhir Gunung Tugel, Kabupaten Banyumas
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<b>Abstract</b>	<p>The use of plastic in Indonesia, especially as packaging, is very popular among the public, because it is practical and has many uses. Plastic consumption in 2020 even reached 67.8 million tons per day. Therefore, one way to overcome this problem is to use and produce biodegradable plastics or bioplastics. Biodegradation of bioplastics can be done with fungi. The potential place to find bioplastic degrading fungi is the Gunung Tugel Ex-Final Disposal Site (TPA). Considering the fact that bioplastics have a fairly good level of degradation, in this study a starchbased biodegradation test will be carried out using isolates of indigenous fungi originating from Ex-TPA Gunung Tugel using the method of calculating the weight loss of bioplastics (weight loss). This study aims to obtain starch-based bioplastic degrading fungi isolates from Ex-TPA Gunung Tugel, Banyumas Regency and determine the highest biodegradability ability of starchbased bioplastics by fungal isolates from Ex-TPA Gunung Tugel, Banyumas Regency. The results showed that isolates of indigenous fungi that had the potential to degrade starch-based bioplastics from Ex-TPA Gunung Tugel, Banyumas Regency were obtained from the genus <i>Aspergillus</i> (GT2 isolate) and <i>Penicillium</i> (GT1, GT3, GT4, GT5, and GT6) isolate. The highest biodegradability of starch-based bioplastics was found by fungi from the genus <i>Aspergillus</i>, namely, isolate GT2 with a weight loss of 21.84%. The biodegradation occurs due to the activity of endoamylase, exoamylase, and glucanase enzymes produced by fungi. The observation of the texture of the bioplastic resulted in a significant change in color, namely from the white bioplastic sheet to brownish. These observations also showed the attachment of fungal mycelium on the surface of the bioplastic accompanied by a hollow and uneven surface of the bioplastic. Key words: Biodegradation, Starch-based bioplastic, Indigenous Fungi, TPA.</p>
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