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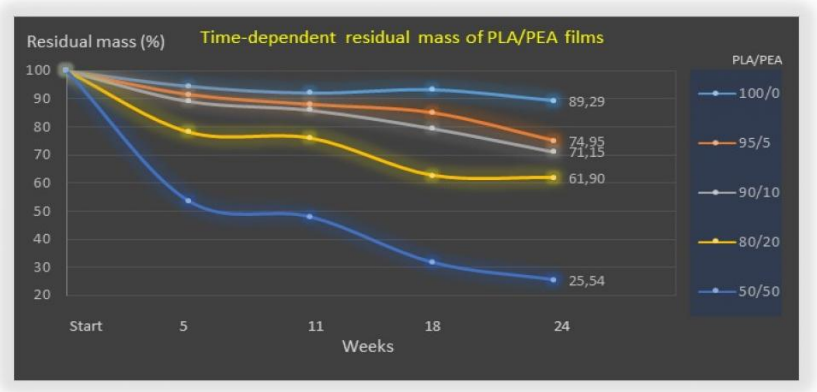
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The Effect of Rose Essential Oil Component Phenyl Ethyl Alcohol on the Time-Dependent Mass Loss of Poly(Lactic Acid)

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Polymeric materials are widely used materials today. The use of so much cause environmental problems such as waste problems. In addition to use for different purposes in accordance with the creatures also revealed the biocompatibility and biodegradability properties, such as the obligation of these materials. Therefore, applications of biopolymers, especially Poly (Lactic acid) (PLA) have increased in recent years. Hydrolytic biodegradation is one of the most important property for these kind of applications. The acceleration and control of this biodegradation process is an important argument for determining and increasing the usage areas of the material. In this study, a natural product Phenyl ethyl alcohol (PEA), which has no cytotoxic effect, mixed with PLA matrix as different proportions and the effect on the hydrolytic degradation process of PLA was investigated. For this purpose, the films were prepared according to the solution casting method by mixing the polymer and the natural component in different weight proportions. Samples were placed in the incubator at the human body temperature (37 °C) and pH (7.4) with Phosphate solution medium. The time-dependent mass loss of this material was investigated. As a result PEA has a time-dependent effect on the mass loss of PLA. The mass loss of PLA increased with the increase of waiting time. In the one-to-one PLA/PEA content (50/50), this loss rate has increased up to 74%.

Keywords: Poly(Lactic Acid), Biodegradation, Phenyl Ethyle Alcohol

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