

## **Biobased formulation films as possible replacement for synthetic (polymeric) food packaging material**

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Substantial number of conventional food packaging consists of non-degradable and petrochemical based materials causing environmental issues. Petroleum based polymers are mostly common used materials for multilayer material production, since they fulfil requirements with respect to its barrier and mechanical properties related to its application on sensitive food products. However, these multilayer materials are often not degradable or hardly recyclable. Thus, scientists are making important efforts in overcoming mentioned issues by production of novel biobased and biodegradable materials. Unfortunately, they often lack barrier to gases and water vapour and can hardly be used as single layer materials for commercial purposes. Therefore, new era relies on enhancing barrier properties of biodegradable polymers in various manners with coatings being one of the solutions. The aim of this study was to coat poly(lactic acid), PLA film with biobased coating (gelatine, chitosan) in order to replace environmentally synthetic bilayer foil (such as oriented poly(ethylene-terephthalate)/polypropylene, OPET/PP). Coating was made from biopolymers and additionally enriched with natural compounds that act as crosslinkers of biopolymer matrix. Changes in gas and water vapour barrier, colour and transmittance were studied. Comparison to OPET/PP film, used as benchmark (control) was provided in order to check the possibility of using prepared formulation of biopolymer coated PLA, with biobased properties, as cover foil for storing different food products (such as fruit jams in plastic PP buckets).

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