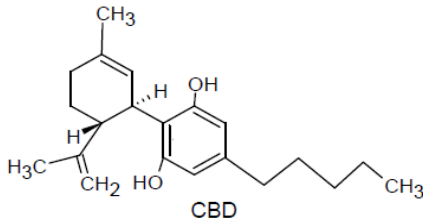


BIODEGRADABLE PLA-BASED MATERIALS MODIFIED BY HEMP EXTRACT

Performed Research:

- Fourier Transform Infrared Spectroscopy - Attenuated Total Reflectance (FTIR-ATR)
- Spectrophotometry Analysis
- Analysis Of The Static Mechanical Properties
- Determination Of Surface Free Energy (SFE)



HEMP
EXTRACT
WITH CBD



POLYLACTIDE
(PLA)

AGING
PROCESSES

EXTRUSION

Aging coefficient of the polymer (K) was calculated from the obtained TS and Eb data before and after aging based on the following formula:

$$K = \frac{(TS \cdot Eb)_{after\ aging}}{(TS \cdot Eb)_{before\ aging}}$$

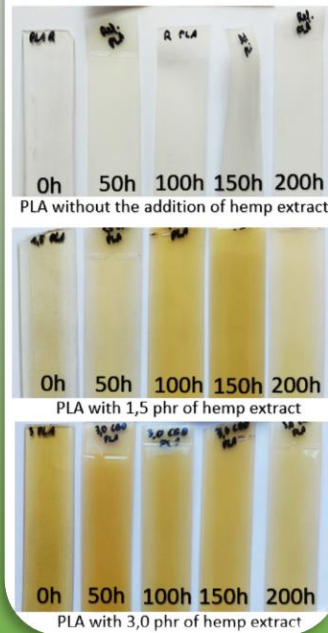
Where:

- K – Aging coefficient [-]
- TS – Tensile strength [MPa]
- Eb – Elongation at break [%]

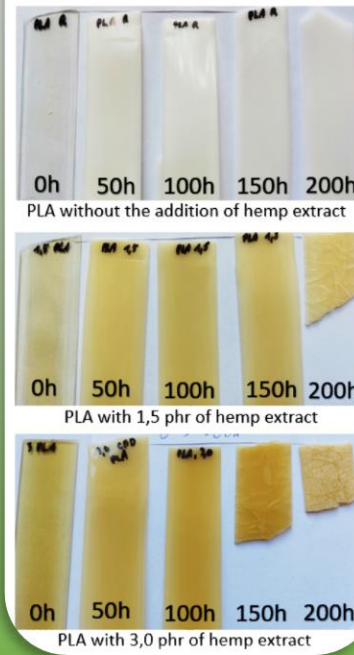
Change in the value of the aging coefficient for PLA samples aged thermo-oxidatively



Aging under thermo-oxidation simulation conditions



Aging under weathering simulation conditions



Change in the value of the aging factor for weather-aged PLA samples

