

THE POSSIBILITY OF FLAXSEED OIL CAKE UTILIZATION FOR NEW COMPOSITE FILM PRODUCTION

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ABSTRACT

Biopolymer based packaging materials have been widely researched for food packaging application, because they are eco-friendly and functionally similar to synthetic polymers. Different sources for biopolymer materials productions are known, but food and agriculture by-products attract great attention, because they lag behind in great amount and regarding their chemical composition, they are considered as underused. Oil industry by-products are suitable for biopolymer films production, because they are rich in proteins, carbohydrates and fibers, which are necessary to obtain the biofilm with good mechanical and barrier properties. Since the pumpkin oil cake (PuOC) based films have good mechanical properties, it is unknown whether flaxseed oil cake (FIOC) could be also used as a suitable source for biopolymer film production. The possibility of linseed oil cake utilization for new composite film production was evaluated. In this regard, PuOC and FIOC were mixed in a ratio 1:1 (Fig.1), 1:3 (Fig.2) and 3:1 (Fig.3). All the film synthesized are examined on mechanical properties (thickness, elongation at break and tensile strength), because they are of great importance due to the potential application for packaged product integrity and its preservation. It has been shown that FIOC films can be synthesized as a component in composite film or as a separate layer, what is an important direction for further investigation.

Keywords: biopolymers, pumpkin oil cake, flaxseed oil cake, mechanical properties.