In recent years, natural polymers have been blended with thermoplastic materials, conferring to these new materials biodegradability along with desirable mechanical properties. Among the biopolymers, starch has demonstrated to be a good candidate in thermoplastic technology for the production of biodegradable materials. However, the starch-based materials that have been produced present poor mechanical properties particularly due to the branched structure of amylopectin. The search for starch from unusual sources, presenting low content of amylopectin is an important research area.

In this study, starch from lobeira (Solanum lycocarpum) was extracted and characterized. The yield obtained in starch extraction was 80%, a very high value compared to cassava (33.3%) and other traditional starch sources. The purity of the starch was tested by CHONPS analysis, which showed absence of sulfur and phosphorus, and confirmed by TGA. FTIR analysis revealed the bands characteristics of polysaccharide (OH stretching-3420 cm\(^{-1}\), CH stretching-2930 cm\(^{-1}\), C-O-C stretching from glycosidic linkage at 1158; 1080 and 1015 cm\(^{-1}\)). Amylose content determined according to Juliano (1979) was 34.6%, value very close to maize. However the viscosity of lobeira starch was higher than maize starch indicating a probable structural difference. SEM of lobeira starch revealed that they present a half globular structure. The swelling and opening of lobeira starch was accomplished by SEM. The swelling start after incubation at 50\(^{\circ}\)C for 10 min and complete opening was obtained after 10 min at 70\(^{\circ}\)C. These results are very promising and open perspectives of using this starch for biodegradable plastic production.

Keywords: starch, materials biodegradability, biopolymers, lobeira.
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