

Performance of thermoplastic sugar palm starch biopolymers

ABSTRACT

The aim of Chapter 4 is to review the recent developments regarding thermoplastic starch derived from the sugar palm tree. Starch has been considered the most promising candidate to substitute for petroleum-based plastic because it is lower in cost, easily available, highly renewable, and environmentally friendly. The presence of heat and plasticizer can transform sugar palm starch into a bioplastic which possesses thermoplastic characteristics. Therefore, this material can be utilized as an alternative for packaging, agricultural, and other short-life products. In order to understand the characteristics of thermoplastic sugar palm starch, testing has been carried out by researchers; including mechanical testing, thermal degradation analysis, physical properties, moisture absorption, and biodegradation behavior. Additionally, the characteristics of thermoplastic sugar palm starch modified by various plasticizers are discussed in this chapter.