

## **Development and characterization of biodegradable composite films based on gelatin derived from beef, pork and fish sources**

### **Abstract**

The objectives of this study were to develop composite films using various gelatin sources with corn oil (CO) incorporation (55.18%) and to investigate the mechanical and physical properties of these films as potential packaging films. There were increases ( $p < 0.05$ ) in the tensile strength (TS) and puncture strength (PS) of films when the concentration of gelatin increased. The mechanical properties of these films were also improved when compared with films produced without CO. Conversely, the water barrier properties of composite films decreased ( $p < 0.05$ ) when the concentration of gelatin in composite films increased. Comparing with pure gelatin films, water and oxygen barrier properties of gelatin films decreased when manufactured with the inclusion of CO.

**Keyword:** Gelatin; Composite films; Biodegradable; Mechanical properties; Barrier properties; FTIR