

## Development of edible film from flaxseed mucilage

### ABSTRACT

A flaxseed mucilage-based edible film was developed with the addition of glycerol as a plasticizer. Various concentrations of glycerol were blended into the extracted mucilage, and the developed films were studied in terms of physical, mechanical, and morphological properties. As the glycerol concentration was increased from 1 to 5 wt%, the elongation at break of the films prominently increased, whereas the tensile strength and Young's modulus decreased. The film failed to form at 6 wt% glycerol inclusion. The developed film was slightly reddish and yellowish in color, with enhanced transparency as the glycerol concentration in the film increased. Overall, this work demonstrated that with the addition of glycerol as a plasticizer up to 5 wt%, a flaxseed mucilage-based edible film could be developed as a sustainable alternative for food and bioproduct coating or packaging.

**Keyword:** Flaxseed; Mucilage; Edible film; Mechanical properties; Glycerol; Plasticizer