

## The Effect of Gamma-Aminobutyric Acid on Mechanical Properties, Water Vapor Permeability and Solubility of Pectin Films

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**Abstract :** Pectin is a structural polysaccharide from plant cell walls and can be used as a stabilizer, gelling and film-forming agents to improve many food products. Moreover, pectin film as a natural biopolymer can be a carrier of several active ingredients such as antioxidant and antimicrobial to provide an active or functional film. Gamma-aminobutyric acid (GABA) is a well-known agent to reduce neuronal excitability throughout the nervous system and it is interesting to investigate the GABA effect as a substitute of normal plasticizer (glycerol) on edible film properties. Therefore, the objective of this study was to determine the effect of GABA concentrations (5-15% of pectin) on film mechanical properties, moisture content, water vapor permeability, and solubility compared with those from glycerol (10% of pectin) plasticized pectin film including a control film (pectin film without any plasticizer). It was found that an increase in GABA concentrations decreased film tensile strength, modulus, solubility and water vapor permeability, but elongation was increased without a change in the moisture content. The smaller amount of GABA showed the equivalent film properties as using a higher amount of glycerol. Consequently, GABA can act as an alternative plasticizer substitute of glycerol at the lower amount used. Moreover, GABA provides the nutritional high value in the food products when the edible packaging material is consumed with products.

**Keywords :** gamma-aminobutyric acid, pectin, plasticizer, edible film

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